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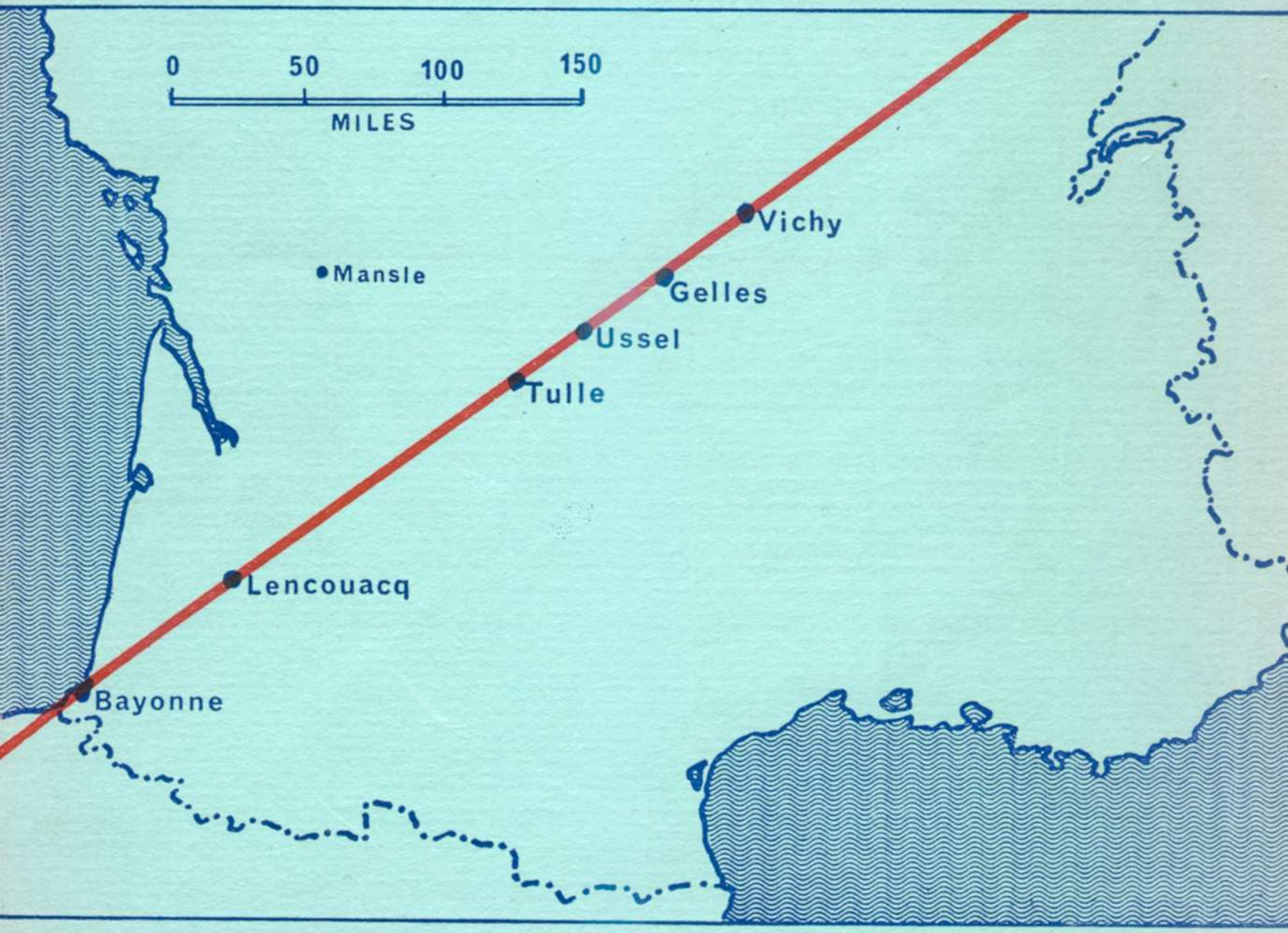

MENZEL v MICHEL

The bi-monthly
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SPACE

Edited by
Waveney Girvan

FLYING SAUCER REVIEW

INCORPORATING FLYING SAUCER NEWS

Vol. 10 No. 2 MARCH-APRIL 1964

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The Crooked Line Theory

ELSEWHERE in this issue will be found contributions from the two most eminent figures in the world of flying saucers. On our right, we might say, is the heavyweight anti-saucer champion Dr. Donald H. Menzel and on our left the highly skilful challenger, Aimé Michel. We cannot pretend to be impartial in this contest, but we think we may be able to clarify an issue which has become, from the point of view of our non-technical readers, rather fogged by higher mathematics. It is also possible that some of our older readers may not have studied Aimé Michel's *Flying Saucers and the Straight Line Mystery*, while some of our newer readers may not have been able to follow the discussion that followed the discovery of Orthoteny. Furthermore, we have found that even those who have pursued the matter have occasionally strayed from its first principles into realms that can only be regarded as highly speculative.

In 1954, France was subjected to a wave of saucer sightings (or, if you prefer it, hallucinations, mock-suns, temperature inversions, etc.) which Aimé Michel was persuaded to plot on a map of this country. He kept to a twenty-four hour day basis and was astonished to discover that, day after day, the places over which the sightings were alleged to have occurred lay along straight lines.

Subsequently, arguments have been brought forward in an attempt to undermine the conclusions to which these straight lines would appear to lead. One was that as the witnesses were on the ground at each sighting point, the actual position of the UFO itself might not correspond with the place on the map. Another objection was that similar straight lines could be traced from any set of points, e.g., towns and cities in the United States of America, seeds sprinkled at random over a map and so on. It was at this stage that higher mathematics was called in. In the former argument, a "corridor" was allowed for to cover the objection that the position of the witness was not necessarily that of the objects he was observing or claimed that he was observing. The odds against chance were still claimed to be overwhelming and in this connection it should be remembered that the "corridor" allowance was a generous one, for many of the 1954 French sightings were seen either near the ground or even on the ground. For example, the Po di Gnocca (Northern Italy) — Southend line of October 15, 1954, took in five sighting points, the first and the last involving actual landings. Later on, another sighting came to light at Vauriat (see FLYING SAUCER REVIEW, May-June, 1963), and it was also found to be on another straight line (Bayonne-Vichy, September 24, 1954) which originally comprised six points. This new

sighting could be pin-pointed with some accuracy. It was exactly over the railway station at Vauriat and low enough to be observed in great detail. Commonsense alone suggests that the two straight lines which we have quoted are extraordinary. These lines do not, of course, prove that the objects were spaceships from Mars or from anywhere else. They do, however, constitute a grave challenge to people like Dr. Menzel and others who regard the UFOs as random occurrences explicable always in terms of natural phenomena, mistakes, hoaxes, etc. If Orthoteny is fact, then the French UFOs of 1954 had nothing random about them.

The other argument brought against Orthoteny by Dr. Isaac Asimov gave Michel his straight lines, but made the point quoted above that one could achieve a similar result by selecting towns and cities in the United States. Nobody would deny this and it is not a valid argument at all. The answer to this is that Michel did not have a very large number of sightings from which to choose: all that came to his notice, he claims, were included. If Michel has indeed included all the available sighting points on a particular day in a single country, then it can be said without doubt that we are engaged in the study of a hitherto unknown phenomenon.

There is a need, as we have mentioned, to warn investigators against overdoing the straight line business. It is no use researching into the past for sightings and constructing straight lines out of them. This method can undoubtedly lead to chance arrangements. We do not have any complete register of sightings, but we realise that in England alone during the last twelve years there must have been many thousands and there have been scores last year alone, as reference to our World Round Up feature will confirm. Some of our readers seem to have been misled by Michel's claim to have discovered Orthoteny on a global scale and the fact that UFOs return to certain world-circle lines. Michel, agree or disagree with him as you will, did not construct his original straight line in this manner: he asserts that he was able to extend the Bayonne-Vichy straight line, not by taking any random selection from the past, but by building on his original discovery—a six point straight line discovered on one day, September 24, 1954, over France. Those who would seek similar Orthotenic lines over Great Britain or elsewhere must obey this system or their researches will either be meaningless or immediately assailable by the laws of chance. Another point that researchers should bear in mind is that the sighting points do not invariably follow a chronological sequence, but the basis on which all studies must be based, in the first instance, is the twenty-four hour day period. Students in Great Britain would be well advised to stick to the Po di Gnocca-Southend alignment which obeys this rule and also includes two landings.

We have mentioned two arguments against Orthoteny. For the first time a third has been brought forward and it is one that we must deplore for Aimé Michel's good faith is recklessly impugned. Now, it is extremely important that Orthoteny be subjected to the most stringent analysis and if it fails it must be thrown out. Flying saucers, we hold, existed before Orthoteny and we believe that they would continue to appear if all Michel's lines were proved to be bent and not straight. But the bending of these lines, if bent they can be, must be accomplished by fair means and not by foul. In an argument at this level, accusations of cheating must be substantiated up to the hilt. If Dr. Menzel really believes that his opponents kept to himself hundreds of sightings which he did not record so as not to damage his theory, then we must echo Michel's query: "Where are they?" If Jacques Bergier is really an accomplice, can we not have some evidence of this? Dr. Menzel seems to have assumed that he is dealing with either fools or knaves. Unless he is prepared to back his innuendoes with something more substantial he should be advised to follow the example of the ex-British anti-saucer champion, Patrick Moore, and retire hurt from the fray.

LESS RIDICULE

Frank Edwards, whose syndicated radio programme "Strangest of All" currently is running daily on about 200 stations, reported in a recent letter that he is encountering less ridicule about UFOs during his talks on the subject.

"Nobody snickers any more," he said. To me this is the most important development in this field in years."

Mr. Edwards also is doing a Sunday 15-minute commentary on a number of stations, and his remarks on UFOs have been well received. In his many public talks, principally at conventions, he said, the UFO subject is always brought up by the audience. His experience is consistent with other information reaching NICAP, indicating widespread serious interest in knowing more about UFOs.

From the American **UFO Investigator**, November—December, 1963.

DO FLYING SAUCERS MOVE IN STRAIGHT LINES?

by DR. DONALD H. MENZEL

In this article, the author, who is Professor of Astrophysics at Harvard University, attacks Orthoteny as discovered by Aimé Michel. Dr. Menzel is the best known opponent of flying saucers, the concept of which he has attacked in two books, " Flying Saucers," published in 1953, and " The World of Flying Saucers," which appeared in 1963. Aimé Michel's reply is to be found on page 8, immediately following this article.

OF all the phenomena adduced by believers to prove that Flying Saucers really exist, one of the most intriguingly complex is " Orthoteny " the occurrence of saucer sightings from places that lie on the same " straight line." Aimé Michel, a French writer, in his book, *Flying Saucers and the Straight-Line Mystery**, makes the following suggestion. Take all the reports of saucer reportings over a given interval, originally set by Michel as one day, from midnight to midnight. Plot them on a map. And you will find that they tend, within a reasonable error, to fall along straight lines. Since any pair of points define a straight line, at least three points are necessary for the line to have any significance. Michel's prize consisted of six sightings out of nine on September 24, 1954, along a line drawn from Bayonne to Vichy, in France, hereafter referred to as the Bavic line.

The basic problem, it would seem, is that of statistics, and it certainly does not create confidence in Michel's statistics when one reads, on page 79, that the odds against the Bavic alignment are 26 to 1, when page 259 (by a different author), records that the odds are about 500,000 to 1. The latter figure, based on a correct formula, is actually much more favourable to Michel's claim. However, we cannot applaud Michel's conservatism when he is actually so very wrong. His calculation makes us just a little suspicious of his ability as a statistician.

Amateur statisticians often unwittingly make serious mistakes that completely invalidate their conclusions. Professional statisticians know how necessary it is to take special care from the very start. Be sure that the basic data you are studying do not possess some particular bias. For example, if you want to predict who will win a given presidential election, a Republican or a Democrat, don't just poll people by telephone or you will miss the many families who do not possess a phone. You will then be making the same mistake that the *Literary Digest* did when they forecast Alfred Landon's election back in 1936. In technical language, be sure your sample is truly random.

Some important questions

It is difficult to make sure that one's sample is random. What is the source of the saucer sightings ? Michel used newspapers from the large city dailies and the small weekly locals. Does one give the same weight to a sighting from a big city as from a small town ? Does the editor of a certain paper have a bias for or against publishing saucer sightings ? Does this bias change with time ? How does a clipping service operate ? How representative and extensive its coverage ? Such questions as these need an answer before one embarks on any statistical study. I don't know the answers to these questions. But apparently Michel gave them no consideration whatever. What I am implying is this: a good statistician sets up the rules for his study at the very start and then sticks to these rules religiously.

The second and very important point is how to sort, screen, or select the data. If the data are processed at all, one must be careful not to introduce a bias. From Michel's book we learn something about his data. The index (page 279) notes that Michel refers to more than 600 French place names. But we do not know how many sightings were at each place or when they occurred. Yet he deals with only a few of these in his statistical

**Flying Saucers and the Straight-Line Mystery* by Aimé Michel. Criterion Books.

analysis. He gives no clear reason for selecting some sightings and ignoring others.

Michel comments that his first attempts to find a pattern in the sightings failed because he "discarded all the poorly reported, poorly proved, and doubtful cases." Two years later he repented. "Suppose that the 'good' reports are true; then perhaps many of the 'poor' reports are true too. What risk would I run by pretending to believe everything, and then seeing what comes of it?"

The true statistician sees danger in this reasoning. He knows the value of good data; he knows that poor data can often lead to a wrong conclusion. Poor data can only mask any effects that might have been present in the good data. The real trouble with Michel's "good data" was their fewness. Adding the poor data enormously increased the number of the points. Although the procedure is risky, try it. But, if you find something, look before you jump to the conclusion that the poor data are good after all. Statistics do not work that way.

Why experts object

We get some idea of Michel's method—or lack of it—by studying his records. As mentioned earlier, the calendar date of the sighting is his usual key for ordering the sightings. This means that a report made after midnight should go over to the next day. I'm not criticizing this rule. A statistician can make any rule he wants, *as long as he sticks to it*! But on September 24, 3 a.m., a sighting at Vierzon lay near another line drawn for the previous day. And so Michel deftly reports it as September 23-24 and plots it on the map for September 23. Amateur statisticians frequently make errors of this sort and do not even understand why the expert objects.

This little trick also neatly gummed up the statistics for September 24, when Michel came up with his prize, the Bavic alignment of six out of nine. It should have been six out of ten. And when I now scrutinize the six sightings, I find that two of them occurred "about 11 p.m." How exact is the "about"? Did one or both these sightings possibly occur after midnight? I don't know of course. Certainly the mere facts of their lying on the same straight line does not prove that they occurred before midnight. Or, if the time is that significant, why did Michel originally divide the day at midnight? Do saucers operate on French local time? Why should the saucers change their flight patterns, as Michel's methods imply, exactly at midnight? Michel himself has doubts and so again he plots two early October 4, morning observations on the map for October 3, because they seemed to fit better. And then, just to be safe, he plots them again on the map for October 4. Remember, statistics do not allow us to change our mind in the middle of an analysis.

What more can we learn about Michel's methods? From time to time he drags in a sighting from Rome or Africa, *if* it fits with his pattern. Clearly he disregards the sighting *if* it does not fit. This procedure is against all the rules of statistics unless the researcher had originally planned systematically to secure all the data over a larger territory and had included all of the observations in his analysis.

I find quite revealing Michel's statement that October 12, 1954, marked the crest of the wave of French sightings. "Unfortunately, witnesses and reporters alike were getting far beyond their depth, and only a limited and inadequate number of all these sightings were dated with any exactness." He complains of the difficulty of dealing with such statistical material. If he had stuck to principle and refused further analysis I should have applauded. But he nonetheless gives maps for another week, containing a bare skeleton of sightings. Straight lines appear, of course, but one does not know how to weight them since Michel does not reveal his criterion for the rejection of the much more numerous non-linear observations.

One long chapter of Michel's book, written by A. D. Mebane, deals with U.S. sightings. The most one can say for this section is that the statistical formulas are correct. But the author believes in saucers and finally argues against the validity of his own statistics.

The derivation of Mebane's formula is much simpler than he makes it. Suppose, for example, that we have a map containing 60 observations of saucer sightings. And suppose we want to predict the number of times that 3 observations lie along the same straight line. Label the observations: a, b, c, d, e, f and combine them in groups of three, as follows: acb, abd, abe, abf, acd, ace, acf, ade, adf, aef, bcd, bce, bcf, bde, bdf, bef, cde, cdf cef, bef. There are 20 combinations of six different things taken three at a time.

One easily proves that the general formula for the number of combinations of n things taken m at a time, abbreviated $\binom{n}{m}$, is:

$$\binom{n}{m} = \frac{n!}{m! \times (n-m)!}$$

where the exclamation point signifies what the mathematicians call "factorial," the product of all the integers from 1 to n.

$$6! = 1 \times 2 \times 3 \times 4 \times 5 \times 6$$
$$3! = 1 \times 2 \times 3$$

and so on. When O! happens to occur, its value is 1. Thus, the number of combinations of 6

things taken 6 at a time is :

$$\binom{6}{6}=\frac{6!}{6!\ \ 0!}=1,$$

and, as in the example of 6 things taken 3 at a time,

$$\binom{6}{3}=\frac{6!}{3!\ \ 3!}=\frac{1\times2\times3\times4\times5\times6}{1\times2\times3\times1\times2\times3}=20.$$

On our map of six observations we can draw 20 zig-zag lines connecting three points. Whether or not any given zig-zag line is straight depends on our definition of straight. Let us try to define it. Connect any two of the points — preferably the ones farthest apart — by a straight line. Then draw, parallel to this line, two other straight lines, two and one-half miles on either side of the original line. These two lines define, with the boundary of the map, a roughly rectangular corridor five miles wide, running across the map. If the third point falls in this corridor we shall say that the line is " straight," with a small allowable margin of error. I have suggested that it be five miles wide, because Michel picks that figure. However, on a number of maps, including the large-scale map 13, the width often reaches and occasionally exceeds ten miles ! Let us defer this question momentarily.

Suppose that this corridor occupies a fraction, f, of the entire map. We have used up two of our points to define this rectangle. If we are studying three-point lines, clearly the probability that the third point will lie within the rectangle is f. If we are counting four-point lines, the probability of getting the two extra points into the corridor is $f \times f = f^2$.

In general, for m points, the probability is f^{m-2} or f multiplied by itself m-2 times. And so, multiplying this value by the number of m-point lines, we get the probable number of m-point lines, from n observations as :

$$No = f^{m-2}\binom{n}{m} = f^{m-2}\frac{n!}{m!\ (n-m)!}$$

This formula agrees with the one in Michel's book, given by Mebane but my derivation of it is simpler. Mebane does not properly define the corridor.

After deriving the formula, Mebane uses it to show that the probability of the aforementioned Bavic line-up of six out of nine sightings is 1 to 500,000. I have already shown that the number should have been six out of ten, a fact that reduces the probability to 1 in 200,000. But there are those two questionable evening observations, which, if omitted, would change the probability to 1 in 90. Michel gives sightings for 27 days, further reducing the probability to about 1 in 3 — certainly a far cry from 1 to 500,000 and within betting range. I shall return to this point again.

Meanwhile let us pause to consider one of Michel's best cases, that of October 7, 1954. For that date Michel had 27 sightings. Of these, 19 lay along three-point lines. The formula, with $f = 1/80$, predicts 37 such three-point lines, almost twice as many as actually observed ! The value for f, selected by Mebane and admittedly uncertain essentially agrees with Michel's estimate. I think it should be larger, but let us use their calculations !

A reasonable conclusion

Now consider carefully ! Michel marvels at finding 19 three-point lines ! Statistics indicates that he should have found 37, twice as many on a random distribution of sightings. Now what do we conclude ? One reasonable conclusion is that the saucers moved in such a pattern that they tried to avoid accidental line-ups. But that is just the reverse of what Michel tries to prove !

And how does Mebane, the statistician, handle the problem ? He first selects 27 (the agreement of number can hardly be accidental) U.S. sightings on November 6, 1957, three years after the French sightings. He does not give the statistics, but the poorly drawn figure indicates results consistent with those from the earlier diagram. As for four-point sightings, Michel gave three in his analysis; Mebane finds three also; theory predicts 2.7. Pretty good agreement, don't you think ?

At this point, Mebane tries a different tack. Instead of plotting saucer sightings, he spatters 27 catnip seeds on a map and connects the points thus defined by straight lines, as before. The number of such lines, connecting the random points, agrees pretty well with his theoretical formula. But Mebane points out a subtle difference. The star-shaped figures outlined by the seeds, he claims, are more irregular and less boxed-in than those on Michel's charts. Michel's figures, he concludes, represent real Orthoteny and have something to do with flying saucers. The random catnip seeds represent " pseudo-orthoteny."

This argument is not science. It is magic. The objective statistics, which seemed about to dispose of Michel's lines as random arrangements, suddenly disappear. A purely subjective test, the regularity or irregularity of the pattern, takes their place. But statistics can tell us nothing about the character of the pattern. Clearly the lines must fall into some sort of pattern. Trying to read something into the figure is a little like attaching significance to the

changing form of a fleecy cloud on a summer day

In short, the statistical analysis has revealed the three-point and four-point lines as accidental features. More than that! On some of Michel's diagrams, where the number of three-point lines is appreciably less than that indicated by chance, a re-examination reveals that he missed drawing in a goodly number, whether by accident or design we do not know.

Michel has discussed two other features purporting to prove the reality of his 3-point lines, on which his original argument largely depended. The first of these relates to the number of intersections at a common point, suggestive of a central control, directing the saucers along lines radiating outward from a point. The spiderweb pattern of map 7 is Michel's best example.

Michel introduces another cute gimmick. He takes his maps in pairs, superimposes them, slides them a trifle and rotates them. In a few instances, he finds a similarity of pattern, and suggests that the saucer operators had kept the same basic flight pattern but had rotated it through some angle on the second night. First of all, the pattern depends almost wholly on those questionable 3-point lines. Second, with enough maps, both slid and rotated, it takes only a little imagination to see occasional similarities. But third, and most important of all, the continued testing of hypothesis after hypothesis as to what the patterns might signify, even if they were real, in itself reduces the chance that any discovered correspondence represents something real. This is an old trap that even experienced statisticians may occasionally fall into.

The final argument

We then approach the final argument, the reality of the five-or-more-point line, on the basis of statistics. The amateurish procedures employed already make the statistician suspicious. Note, first of all, that Michel himself casts doubt on the reliability of at least some of the six Bavic sightings. If they were all reliable, the frequency of 6 out of ten sightings falling into the corridor is, as previously noted, about 1 in 20,000, with $f = 1/80$.

Mebane notes however that his formula predicts too few of the lines consisting of more than 4 points and I would agree that $f = 1/40$ is a better value for such lines than $f = 1/80$. And 1/40 is exactly the figure Michel gives for the Bavic line. This new value reduces the sighting probability to 1 in 1250. But this figure still is based on the assumption that all 6 of the observations are good. If one or more are to be eliminated, the probability radically alters.

But there is another way in which the probability may have been seriously and inadvertently altered. Michel himself has provided the clue, again with his amateur statistics.

Let us suppose, for example, that a 4-point line has shown up, crossing some map. He would like to get some more sightings to confirm the reality of this line. A number of towns and villages lie along the line. How easy to write to some friend, to the local newspaper, or to the postmaster of several of these towns, requesting information about sightings on a certain date. Sure enough, two replies came in; the 4-point line becomes a 6-pointer. And the amateur statistician becomes impressed with his predictive powers and in the reality of the line.

This natural procedure seems harmless enough and the amateur will probably see nothing wrong in it. But what might have been a 4-out-of-8 line, with a moderate probability of 1 in 23 for a single map does not become 1 in 1250 as previously indicated. The factor (1/40) becomes 1, because we now are searching only along the corridor.

The statistics are somewhat confused, because the correct procedure applies to only *random* sightings. A search along the line does not possess the random character necessary for statistics to apply. The two added observations have the same effect as if they were outside the corridor. Here the implication is that if one wrote to the same number of places outside the corridor, he would have received an equal number of new reports. Thus, the new probability is $(\frac{1}{40})^2\binom{10}{4}$, or about 1 in 8. Flying saucer enthusiasts will probably violently reject my claim that two discoveries *along* the line should *reduce* rather than increase the probability that the line is real. Such are the facts of life. The reason is simple. If someone can write to a few towns in the corridor and get even two affirmative replies, the chances are that a similar questioning of towns outside the corridor would have produced at least the same number of affirmative replies. One might even argue that, since the area outside is 40 times larger than that of the corridor, one should multiply the number of saucers reported by 40.

In the FLYING SAUCER REVIEW, May-June, 1963, Michel continues to apply his weird statistics. He acknowledges Mebane and various critics who showed "that a considerable number of the straight lines . . . drawn could be explained by the simple laws of chance."

However he follows this partial concession by reaffirming his faith in the reality of certain

sightings and denotes the rest of his note almost wholly to the Bavic line.

In 1958, a friend sent Michel a Portuguese sighting that had occurred on September 24, 1954. Michel found, to his "amazement" that the sighting fell on the extended Bavic line and gives his estimate of the probability against this happening by chance at some 30 million to one.

There are many things wrong with the statistics here. Why did his correspondent send him this sighting? The probability is high that the friend had already noted its closeness to the Bavic line. But, if Michel wanted to include Portugal, he should have made an effort to secure all the Portuguese sightings. If the sighting had *not* fallen on the line we most certainly would never have heard of it. Michel indicates that he was "upset" by the new sighting on September 24, presumably because it would be a random sighting and therefore weaken his six out of nine. Statisticians should never get "upset." They must accept calmly what the analysis shows. He certainly neatly disposed of the extra sighting of September 24, 1954 by relegating it to the previous day, as I have already noted. Actually, the Portuguese sighting is irrelevant statistically.

I finally get a picture of Michel's methods. He now becomes convinced that the Bavic line was not a transient affair of September 24, 1954 but a permanent line. Michel "establishes" this alleged fact by making a special search, along the line, for sightings in its neighbourhood.

He notes, without detail, that simultaneous sightings occurred on October 24, 1957, in Tulle and Brive, both on the line. He asks "Could that be a coincidence?" evidently expecting a resounding negative. But during the three-plus years between the two sets of sightings, how many saucer reports had come in from all over France? I would assume that 100 is indeed conservative. What are the chances that two of these sightings should lie on the established Bavic line? The answer is:

$$\text{number} = \left(\frac{1}{80}\right)^2 \frac{100!}{98! \quad 2!} = 0.78$$

In other words the chances are 78 per cent in favour of such an accidental line up. The statistical approach is very different for the studies made after the original investigation especially when one has made an arbitrary change of rules.

By the same sort of argument Michel adds a sighting at Vauriat on August 29, 1962, derived as he himself clearly states, by "studying very closely the cases of landings reported along this line." This procedure is exactly what I have suspected Michel of using previously and it is absolutely contrary to statistical practices. Michel selects Vauriat as outstanding, because it was, in his opinion, "The most sensational French sighting of the year." What a change of statistical method! Originally Michel included everything, good and bad. Now he excludes all but one, evaluated by subjective impression.

Statistical Significance

What does the statistician conclude? Whatever merit may originally have existed in the Bavic line stemmed from the fact that 6-out-of-10 sightings occurred along it in 24 hours of one day back in 1954. Now, if hundreds of sightings and eight years later, the number finally in the line is increased from 6-out-of-10 to 10-out-of-600, Its statistical significance is nil.

Because the Bavic line, extended around the earth, runs through Brazil, Argentina, New Guinea, and New Zealand among other countries, Michel now unveils his final conclusion: the Bavic line possessess planetary significance. He drops all pretence of using statistics. He makes short shrift of the enormous number of U.S. sightings, attributing them all to the launching of the first Sputnik. How far he has come from his original premise of taking all the observations, good and bad, and treating them all alike! About all he succeeds in showing is that a great circle connecting France and Argentina also runs through Brazil and some other countries. He makes no attempt to show that the sightings outside of France fall in the narrow corridor defined by the extended Bavic line.

I have gone thus into detail, taking Michel's arguments one by one. The straight lines are clearly the result of extremely bad statistics. The claims toward high precision do not hold up. The lines exist only in the imagination of Michel and his followers. Orthoteny is another of the flying saucer myths.

WHERE DR. MENZEL HAS GONE WRONG

A reply from Aimé Michel

AT the very outset of my reply, I hope that Dr. Menzel will allow me to state that there is agreement between us on one point at least. I regard as fully justified the suspicion in which the amateur is held. When a specialist on the Sun ventures to explain the UFO phenomenon in terms of mirages (when mirages are outside the range of his competence), then he exposes himself to the scorn of those who are in fact experts in both these fields of research. Dr. Menzel has already suffered this fate when he wrote his first book, *Flying Saucers* (Harvard University Press), in 1953: his interpretation of the phenomena due, if we are to believe him, to temperature inversions ended up by giving us flying houses and flying lakes (see Aimé Michel, *The Truth About Flying Saucers,* Corgi edition, p. 190 and in the American edition, p.186). These rationalisations certainly amused the meteorologists but failed to explain the flying saucers.

There are so many howlers in his attempt to deal with Orthoteny that I propose to deal with them in the order in which Dr. Menzel has committed his errors.

The Arguments

He starts by criticising my statistical method and, if his arguments are accepted, he soon demolishes it. It is, he says, essentially the method of an ignoramus and an amateur. He then exposes the method adopted by Lex Mebane. He is willing to admit that it is " correct ", but finds a way of improving and simplifying it. He says: " Connect any two of the points — preferably the ones farthest apart—by a straight line. Then draw, parallel to this line, two other straight lines, two and a half miles on either side of the original line. These two lines define, within the boundary of the map, a roughly rectangular corridor five miles wide, running across the map ", etc.

And now let us refer to the passage in my book at the foot of page 78 in which I set forth my own method: —

" Assuming that real objects were seen, we may allow that their distance from the observer (and hence from the line) was as great, perhaps, as two and a-half miles. This gives us a rectangle 5 miles wide and 287 miles long, having an area of 1,440 sq. miles, within which we may assert that all six of the objects seen were located."

Yes, indeed! Dr. Menzel is " improving " Mebane's method by means of his own method, which is in turn none other than the poor and amateurish method of Aimé Michel. He not only uses my figures (rectangle and possible aleatory surface) but he keeps my method of calculation while putting it, it is true, into mathematical formulae and baptizing my rectangle with the name of " corridor." (Let us note *en passant* that these formulae of which he seems very proud because they are " professional," are the elementary formulae of combinative analysis that youngsters in all scientific schools throughout the world learn around the age of 18. We note that Dr. Menzel has not forgotten them.)

An Analysis of the facts

Dr. Menzel's satisfaction with his work is a joy to see. He says: " This formula agrees with the one in Michel's book, given by Mebane, but my derivation of this is simpler. *Mebane does not properly define the corridor* " . . . (My italics.—A.M.). That it should have been Aimé Michel who, in fact, defined the corridor, is of no importance. Aimé Michel is only a poor stupid amateur, and Menzel, who copies Michel's methods, congratulates himself on his achievement. But let us leave the methods and see whether Dr. Menzel succeeds even in his analysis of the facts.

On October 7, 1954, he writes: " Michel had 27 sightings. Michel marvels at finding 19 three-point lines! Statistics indicate that he should have found 37, twice as many on a random distribution of sightings," etc. From his analysis, Dr. Menzel draws a number of deductions : —

1. Michel makes himself look ridiculous by finding less three-point alignments than are foreseen by mere chance. To this my reply is: Dr. Menzel had at hand all the factors—map, locations of eye witnesses, etc.—for finding the missing alignments. Why has he not done it ? It is true that there are three or four more that can be found. But a dozen and a half is impossible, no matter who tries it. Which is good proof that the network of sighting-points is inexplicable by chance. I await Dr. Menzel's explanation on the subject of this curious insufficiency of chance alignments. For the reader

who is not a mathematician, we would explain that a result *lower* than chance is just as conclusive as a result *higher* than chance. It is moreover easy to cast 27 points — or more — on to a surface and produce no alignment of any sort. It is enough if one puts these points on a circle, for example.

2. Mebane (so Dr. Menzel says) adduces " magical " arguments, which have nothing to do with Science, when he emphasises the regular and " boxed-in " appearance of the line-up of October 7 in comparison with the artificially obtained line-up given on page 261. Dr. Menzel asserts that the regularity or irregularity of a line-up is a purely subjective notion. It is at this point that we begin to have our suspicions as to why it is that Dr. Menzel is so proud of his formula of combinative analysis. It is because for him they are apparently the summit of Mathematics. I am therefore happy to reveal to him the existence of a mathematical discipline which is called Topology and which shows, precisely, how to obtain in rigorously strict fashion, those results that Dr. Menzel is unable to imagine outside the realm of " magic." And as it seems a bit late in the day for Dr. Menzel to start studying Topology, will he please allow me to remind him of a " magical " arrangement of things well known to astronomers, namely the disposition of the white streaks radiating out around the crater Copernicus, on the surface of the Moon. If it is by chance that the network of October 2 converges in a star at Poncey (page 106) and if it is by chance that it converges on October 7 at Montlevic (page 141), and if we are engaging in " magic " when we establish the fact of these convergences in the form of a star, then is it " magic " that Dr. Menzel's colleagues are practising when they seek the possible causes for the streaks around the crater Copernicus ?
3. Even more interesting than the deductions made by Dr. Menzel are those that he refrains from making. I said in my article in the FLYING SAUCER REVIEW (Vol. 9, No. 3, p.3) that since certain alignments could be explained by chance, I had—since Lex Mebane's work on the subject—directed my investigations to the other alignments, namely those involving numerous points. What does Dr. Menzel do about the network of October 7 ? He attacks the three-point alignments, but completely ignores the most interesting alignment of that day — the Cherbourg-Cassis alignment which covers *seven* points. His own formula should tell him that the odds against chance are of the nature of 1,000 to 1. Is this the reason why he ignores this particular alignment ? Or does he prefer not to see anything he would rather overlook ?

It is true that Dr. Menzel has made a frontal attack on the most difficult alignment for him to explain, namely Jacques Vallée's Bayonne-Vichy Line (BAVIC). Here we see the " triumph " of his methods. He says : —

" Let us suppose for example that a four-point line has shown up, crossing some map. He (Michel) would like to get some more sightings to confirm the reality of this line. A number of towns and villages lie along the line. How easy to write to some friend, to the local newspaper, or to the postmaster of several of these towns, requesting information about sightings on a certain date. Sure enough, two replies come in; the four-point line becomes a six-pointer. And the amateur statistician becomes impressed with his predictive powers and with the reality of the line."

A skilful polemicist

What possible answer can Aimé Michel give to this accusation ? That he wrote neither to the local newspaper nor to the postmaster ? If he did one can almost see Dr. Menzel's smile of condescension and air of disbelief. And if Michel protests his good faith and honesty he will merely attract a deeper distrust. Dr. Menzel is a skilful polemicist. When the facts cannot be interpreted by his method in the way he would like, he falls back on insinuation. I am, he alleges, a faker and a liar. The game is won.

The time has come to do what Dr. Menzel has not apparently done and that is to refer to the book which he is attacking. On page 177 the facts which he disputes are reported. It will be seen there that *all* the facts involved in this alignment have been taken direct from the large Paris daily papers. No local newspaper, no writing to the postmaster ! Certainly not, that is a trumped-up story. On consulting my files, I find that I need have quoted only three large Paris newspapers—*France Soir, Le Parisien Libéré, Paris Presse* — in order to obtain all the references to that particular day, September 24, 1954. And that is not all. Dr. Menzel's invention does not end there. In 1958, Jacques Bergier sends me another sighting for this day. It was reported in *Le Parisien Libéré*, but several months later, which explains why I had not seen it earlier. This new sighting was also found to be on the BAVIC line and brought the number up to seven (out of a total of 10) sightings which were strictly on a line. Dr. Menzel has this to say: " Why did his correspondent send him this sighting ? The probability is high that the friend had already noted its closeness to the

BAVIC line . . . . If the sighting had *not* fallen on the line, we most certainly would never have heard of it."

Until that point I had supposed that Dr. Menzel had not read my book. Perhaps he cannot read. But let us refer to my book on page 206. Bergier, who is there compared with Dr. Menzel, is referred to by me in these terms: "In France, my most stubborn and persistent adversary is the physicist Jacques Bergier, of the New York Academy of Sciences, a former student of Madame Curie. Sometimes we both refute each other in the same newspaper issue . . ." *

Yes indeed ! Bergier, my "accomplice," if we are to believe Dr. Menzel, turns out to be none other than the Dr. Menzel of the French saucer world. I cannot believe that Dr. Menzel can have forgotten my description of Bergier. Courtesy alone forbids my suggesting the explanation of why one man, in a scientific argument, should so readily accuse his opponent of bad faith. Need I say more ?

In conclusion

In conclusion, I would like to say a few words about Vauriat which a sighting enabled us to locate along the previously established BAVIC line. This line had been calculated with extreme precision by Jacques Vallée who based himself on numerous sightings other than those of September 24, 1954. His calculations have been tested in France by another method, equally strict, and the result is identical. This is the line that was marked out across the map of the Puy de Dome region and with which we found Vauriat. Now, the agreement between the BAVIC line and the Vauriat sighting is such that, on the 1: 200,000 scale, where one millimetre equals 200 metres, *no error at all* can be detected.

For the sake of gratifying Dr. Menzel, however, let us agree to allow an error of, say, 200 metres. How many sightings would be needed over the whole of France for chance to allow the possibility of placing *one* sighting in a corridor of 400 metres wide ? Dr. Menzels suggests 100. Very good. Let us grant him 200. In fact, on the basis of the formula that he proposes, the calculation calls for at least 1,500 sightings. Well, where are these sightings ?

To sum up, all that is left of Dr. Menzel's arguments is an interesting, but not intentional, suggestion: it is that the non-aleatory character of the networks be analyzed by Topology. Apart from that, he has merely demonstrated his incompetence and his triviality. His self-admiration is so sincere that this demonstration will not profit him at all. The flying saucer is his hobby horse. It would be kinder to let him continue riding it. What he has to say about the subject of flying saucers is neither of interest nor of importance.

*Readers of the May-June, 1963, issue of the FLYING SAUCER REVIEW will recall that in Aimé Michel's article on Global Orthoteny Jacques Bergier produced the Vauriat sighting to Michael as a means of upsetting the BAVIC alignment and not in order to support Orthoteny.—Editor.

Sighting reports . . .

From England, South Wales, Portugal

and Australia

. . . in this issue

THE SALTWOOD MYSTERY

Strange happenings in Kent

THE evening of Saturday, November 16, 1963, was cold and bright and there was a new moon in the sky. Four teenagers, three boys and a girl, were walking along a country road in the area of Sandling Park, near Hythe, Kent. John Flaxton, aged 17, a painter employed in the Kent village of Saltwood happened to look at the sky above the woods at Slaybrook Corner and noticed that one of the stars above him appeared to be moving.

John Flaxton admitted to being frightened, for not only was the " star " moving : it was descending towards the four young people. Flaxton stated to a reporter : " It was uncanny. The reddish yellow light was coming out of the sky at an angle of sixty degrees. As it came towards the ground it seemed to hover more slowly. I grew cold all over as it vanished behind a clump of trees." The next thing to happen sent the four young people rushing for safety in terror. A bright golden light suddenly appeared in the field alongside them. " It was about eighty yards away," John Flaxton declared, " floating about ten feet above the ground. It seemed to move along with us, stopping when we stopped as if it was observing us. The light was oval, about fifteen to twenty feet across with a bright, solid core.

" It disappeared behind trees and a few seconds later a dark figure shambled out. It was all black, about the size of a human but without a head. It seemed to have wings like a bat on either side and came stumbling towards us We didn't wait to investigate."

Was it a ghost?

One of John's companions, 18-year-old Mervyn Hutchinson, a plastic moulder of Bartholomew Lane, Saltwood, also saw the figure clearly.

" It was just like a bat with webbed feet and no head."

All four teenagers were convinced they had seen a ghost.

" I've never been so frightened. I didn't believe in ghosts until then," says 16-year-old Jenny Holloway of Lenham.

From the preceding account it will be seen that the four witnesses assumed that what they had seen was supernatural. The story was given publicity in the local newspapers and in the national press, too. As the FLYING SAUCER REVIEW has pointed out from time to time, ghosts and miracles may be merely rationalisations for flying saucers which the majority will even now not accept as real. On the other hand, Hythe and Folkestone may well have been confronted with two or even more mysteries. But it would certainly seem that John Flaxton's experience appears to be well within the Type 1 sighting classification (see Jacques Vallée's article in the REVIEW'S January-February, 1964, issue).

Other experiences in the area are as follows: —

November 21, 1963. Witness : Keith Croucher.
Age : 17.
Occupation : Apprentice Electrical Engineer.

" I was passing the Brockhill School football pitch which leads on to the Sandling Estate when I felt a sudden breath of cold wind and saw what looked like a golden mist beginning to cross the pitch. At the centre of the mist was a solid oval light that seemed to move slowly over the ground. The whole thing was about twenty feet square. I was frightened and ran away. When I came back it had gone."

November 23/24. Witnesses: John McGoldrick and friend.
Age: 16.
Address: Hythe, Kent.

" After hearing about Keith Croucher's experience, I went with a friend into Sandlingwoods to investigate. In a clearing in the woods we found a vast expanse of bracken that had been completely flattened — as if some huge and heavy object had rested there. Nearby we found three giant footprints. They were clear footprints, almost two feet long and about nine inches across. They must have been a full inch deep. On December 11 we went down to the site with two reporters and found the wood lit up by a strange pulsating light. It seemed to come from the heart of the trees. We kept watch at a distance for over half an hour but saw nothing except the light. We were far too frightened to go any closer."

Mr. William Waite, a retired senior civil servant

who used to work for the Aeronautical Inspection Board, near Uxbridge, Middlesex, was walking with his dog in the neighbourhood about a week before the event described above made the following statement when interviewed: "I saw this bright bluish-white light, about the size of a golf ball flying directly ahead of me. It travelled quite slowly in a steady horizontal direction. It definitely wasn't an aeroplane. The whole thing struck me as very peculiar. The light appeared from the north, crossed Sandling Road, where all these strange things have been seen, and headed out for sea."

Sceptics then got busy with explanations which ranged from magnesium flares to poachers flashing torches to hypnotise the birds.

The local rector, the Rev. E. E. Stanton, when asked his opinion, replied: "It definitely isn't a hoax. Several youngsters have told me about the strange things they have seen. All were very frightened. Obviously they have seen something out of their normal experience."

Some adherents of the ghost theory recall the legend that Slaybrook Corner was the scene of a bloody battle centuries ago. Others declare that the ghost of William Tournay Tournay is the culprit. Tournay was an eccentric who was buried at his own request on an island in the middle of a lake on the estate.

WHAT HAPPENED AT FÁTIMA?

by ANTONIO RIBERA

The strange events at Fátima in 1917 have led to controversy which persists to the present day. In presenting this resumé, it is necessary to warn investigators into the UFO problem that attempts to rationalise the mysterious are not by any means confined to the saucer sceptic. Those who accept the interplanetary saucer may themselves fall into the same error. To these people the flying saucer has become so acceptable and even so commonplace that by explaining the miracle at Fátima in terms of the UFO it is possible that we may be trying to simplify an occurrence connected with a mystery of divine profundity. In fact, it could be that the UFOs themselves are more "miraculous" than many of us would care to admit.

Two points of interest can be made. Unexplained in terms of present UFO knowledge is the fact that date of the miracle at Fátima was predicted with remarkable accuracy some weeks before the event.

SOME years after the turn of the century—in 1917 to be exact — when war was still raging, there happened in Fátima, a small village in the district of Leiria, at some 62 miles north of Lisbon, Portugal, a series of strange things which at the epoch were interpreted as "miracles" but today, scrutinised through a UFO "lens" — to quote Mr. W. R. Drake — they look very different and full of new meaning.

A visitation?

Fifty years ago Portugal was a very backward country and the strange happenings which took place in that remote corner of it, among illiterate peasants, were apt to receive a "religious" explanation, more so in times of superstition, as was the condition which existed in the Portuguese countryside in 1917. Those happenings were currently interpreted as an apparition of the Holy Virgin, but two thousand years ago they could have been interpreted as the coming of the gods upon the earth . . . referring in both instances to some visitation by extra-terrestrial beings, very real in fact and neither "godlike" nor "miraculous." M. Agrest, Professor of Physics and Mathematics in Armenia and well-known science author in the Soviet Union, has published a very interesting article in the

Literatournaya Gazeta about the possibility of the planet Earth having been visited in the remote past by "cosmonauts" coming from other planetary systems. As evidence, he puts forth the Temple of Baalbek and its huge platform (a launching site ?); the strange paintings from the Tassili (Hoggar, Sahara), discovered by Henri Lothe, with the "big Martian god." He quotes from the Bible, and stresses his well-known theory about the destruction of Sodom and Gomorah by a nuclear explosion. He refers to the tektites, found in several parts of the globe (Libya, India and Australia), the remains of ancient knowledge found in old traditions, such as the Maya calendar, the knowledge which the African Dogons possess about the black companion of Sirius. He also mentions the knowledge of the tenth Pleiad, invisible to the naked eye, which the Mediterranean peoples possess; he refers to Mars (the dry planet) and to Venus (the planet with an ocean); to the two satellites of Mars, quoted by the Dean Swift in *Gulliver's Travels* (Phobos and Deimos were *officially* discovered by Asaph Hall in 1877), and also by Voltairo in the *Micromegas*.

It seems, therefore that a more recent fact ought to be added to the list compiled by Professor Agrest. And this fact corroborates this law: the same facts are apt to receive different explanations or interpretations according not only to the time they took place, but also to the cultural background against which they took place.

Six sightings

Reducing the Fátima happenings to our modern concept of the UFO, we could say that the sightings took place from May 13, 1917, to October 17, 1917. All together there were six sightings. The witnesses were: Lucia de Jesús, aged ten, and her cousins Francisco Marto and Jacinto Marto, aged nine and seven, shepherds. (The fifth sighting had several hundred witnesses. For the sixth sighting, the witnesses were 70,000).

These children's sightings would today be included among the "contact claims," for contacts they were: in all the six instances reported, the children met a "celestial being" in the Cova da Iria, an enormous creek, roughly circular in shape, which lies at 2.5 kilometres from Fátima. In that place, while the three children were collecting their sheep about noon, they saw a flash in the heaven. Some minutes later, a white, bright figure appeared near a small oak tree. Now we must bear in mind the general law quoted above: how a space being could have looked to three ignorant, illiterate children from a Catholic country of fifty years ago? As the Holy Virgin, naturally. As they said later, "the wonderful Lady looked young. Her dress, white as snow and tied to her neck by a gold band, wholly covered her body. A white cloak, with a golden edge, covered her head (this could be a globular, translucent helmet like a saint's halo). Near her hands (not in them), there was a Rosary of pearly white grains (remember the belts of beings from space, with flashing lights, quoted by Oscar Linke, Siragusa and other modern contact claimants). The face was circled by a golden halo." Now there began some sort of telepathic dialogue between the "Lady" and the three children. This dialogue was evidently very religious in its essence, but again we have to remind ourselves of the mentality and background of the three children and their country at the time. They simply could not be addressed in modern, scientific terms. (Remember also the white explorer who presents himself to backward natives as "the great white god" in order to win their reverence and to convey to them some simple ideas and truths). On the other hand, there does seem to exist some mysterious link between flying saucers and religious belief; the Bible, as my friend Eugenio Danyans, the biblical expert, could prove, is full of unexplained links of this kind, beginning with the name "galgal" itself, applied to Yahve and which means "wheel," or "circular movement" in Hebrew, and finishing by the Sinai "contact claim" which resulted in the Decalogue. This is not to deny God; according to Danyans, He could have employed messengers or angels.

This was the first "contact." The second took place on June 13 and it was very similar to the first. This time the "Lady" said that She would like the three children to learn to read.

The third "contact" or "apparition," as the Catholic Church termed it, took place exactly a month later. Many clergymen, among them the Rector of Fátima, the Rev. Manuel Marques Ferreira, were sceptical or openly hostile to the sightings. The Rector even thought that it could be the Devil himself who was tempting the children. Such was the fanaticism of the time that the three poor children were even put to prison for several days. On the occasion of the third contact the Being said for the first time to the children that in October She would perform a great miracle in order to convince everybody.

The fourth sighting was to have taken place on August 13, but the children were delayed and taken to Vila Nova de Ourem in a car by Arturo d'Oliveira Santos, mayor of Vila Nova, a Free-

mason and an atheist, who submitted the children to interrogation and threats before kidnapping them. This will give the reader an idea of the atmosphere of the times. After fresh " brainwashing " by Senhor Santos, the children were permitted to go to Cova da Iria on the 19th, but this time they met the Being in an unexpected place, in the Valinhos (Little Valleys).

Many witnesses

On September 13 the witnesses were very many, and they could even see the " ship " in which the Being came to the meeting place. According to the Rev. General Vicar of Leiria, who was one of the witnesses, the Lady came in an " aeroplane of light ", an " immense globe, flying westwards, at moderate speed. It irradiated a very bright light." Some other witnesses saw a white Being coming out from the globe, which several minutes later took off, disappearing in the direction of the Sun. For their part, the three little shepherds also saw the Lady, who said again that in October She would perform a miracle for everybody to see. This time the phenomenon was accompanied by a classical happening in UFOs sightings: " angel hair " falling from the skies (*fils de la Vierge* in French) " *as snowflakes,* which melted away upon falling on the ground."*

But the most important " sighting " had still to take place. It happened, as promised by the celestial Being, on October 13, and it was seen by thousands of witnesses, since the news had spread all over Portugal that something " big " was going to happen on that day.

The features of this sighting were even more strongly reminiscent of the modern Saucer. Since early morning, all the roads and lanes that led to Fátima were crowded by " pilgrims," fanatics or the simply curious and even atheists (there were a large number of non-believers at the time in Catholic countries like Spain and Portugal), who went there to ridicule the others. Unfortunately, the day dawned cloudy and wet. At 11.30 a.m. between 50,000 and 70,000 people were assembled in Cova da Iria. Among them there were many reporters sent by periodicals from Lisbon and Porto. At midday, the *solar prodige* began: the sun shone through the clouds (it was raining heavily at the time) and began its dance.

But let the sighting be explained by one well qualified witness: the Professor Almeida Garrett, distinguished scientist, professor at the Coimbra University, who was among the crowd: " It was raining hard, and the rain trickled down the dresses of everybody. Suddenly, the sun shone through the dense cloud which covered it: everybody looked in its direction . . . *It looked like a disc,* of a very definite contour; it was not dazzling. I don't think that it could be compared to a dull silver disc, as someone said later in Fátima. No. It rather possessed a clear, changing brightness, *which one could compare to a pearl* . . . It looked like a *polished wheel* . . . This is not poetry; my eyes have seen it . . . This clear-shaped disc suddenly began turning. *It rotated with increasing speed* . . . Suddenly, the crowd began crying with anguish. The sun, revolving all the time, began falling towards the earth, reddish and bloody, threatening to crush everybody under its fiery weight . . ."

A local phenomenon

When the disc, rotating all the time, descended towards the crowd, many people felt *a tickling sensation* and heat. From a place situated at 12 kilometres from Fátima, some other witnesses saw also " the dance of the sun." But the astronomical observatories all over the world had not noted anything abnormal on that day . . . This means that it was a local phenomenon; a phenomenon which took place at a very low altitude (some hundreds of metres, probably), and was meant only *for the people assembled in Fátima,* in order to impress them.

Today, in a very different spiritual climate, when much evidence points to past visitations to the Earth by beings not of this world (not supernatural beings, but beings that may be like ourselves, but empowered with intelligences and techniques beyond our own), the strange happenings of Fátima can be looked at in a different and more revealing light. Maybe Fátima was one of *their* last attempts to contact us on a large scale; maybe they are patiently waiting until the time when we can stand at their side as equals (or like disciples), and no longer resemble backward natives confronting " the great white gods who have descended from Heaven . . ."

Las maravillas de Fátima, by L. Gonzaga da Fonseca, S.I.

NEW LIGHT ON ANCIENT TRACKS

by J. GODDARD

IF a traveller on one of today's roads looked out of his car window and saw a clump of trees on a hilltop, he would probably think nothing of it. However, if he had taken his journey in prehistoric times these trees would probably have been vital to him, for clumps like them are signposts on what must be the oldest route system in the world. These are the "leys," old straight tracks stretching for miles over the English countryside, rediscovered in 1922 by Alfred Watkins, an amateur Herefordshire archaeologist. Though they are forgotten by scientist and traveller alike, and the system has long fallen into disrepair, their ancient marks can still be seen by those who know what to look for.

Things to look for

Ley points are always of prehistoric origin, showing that these tracks were in use long before the Romans came to Britain. Such things to look for are standing stones, stone circles, tumuli (burial mounds), clumps of trees on hilltops (the descendants of earlier clumps) and other artificial prehistoric landmarks. Even churches are acceptable, because the ancient ones were almost invariably built on older pagan sites. A ley is found by aligning as many as possible of these "mark points," and once you have discovered it you will continue to find marks as far as you care to continue the line, and on most leys there are pieces of straight track following the alignment at various points.

But this is not all. When you start plotting these leys you will find that a remarkable pattern will begin to emerge. The alignments found converge on certain points, sometimes ten or more of them, and at these "centres" there is usually a more important prehistoric landmark. The sites at Stonehenge and Avebury both have over ten leys going through them, and there are a great many with over six.

Sometimes, though not very often, roads of today converge on the ancient centres. Sunbury Cross, a very busy road junction, is one such example, and though the modern highways soon take their twisting routes away from the old straight tracks, the site of the crossing point has been the same since earliest times.

There are a few centres without marks, though these are in the minority and it is always as well to go to the spot to see if there is something not marked on the map. Once, when on an expedition with the Ley Hunter's Club, an organisation recently set up for the investigation and indexing of Watkin's discoveries, I went to a centre which I had previously thought had no mark. You can imagine how surprised and pleased we were to find a small unmarked farm called Leylands Farm! This shows how essential fieldwork is in the study of the tracks.

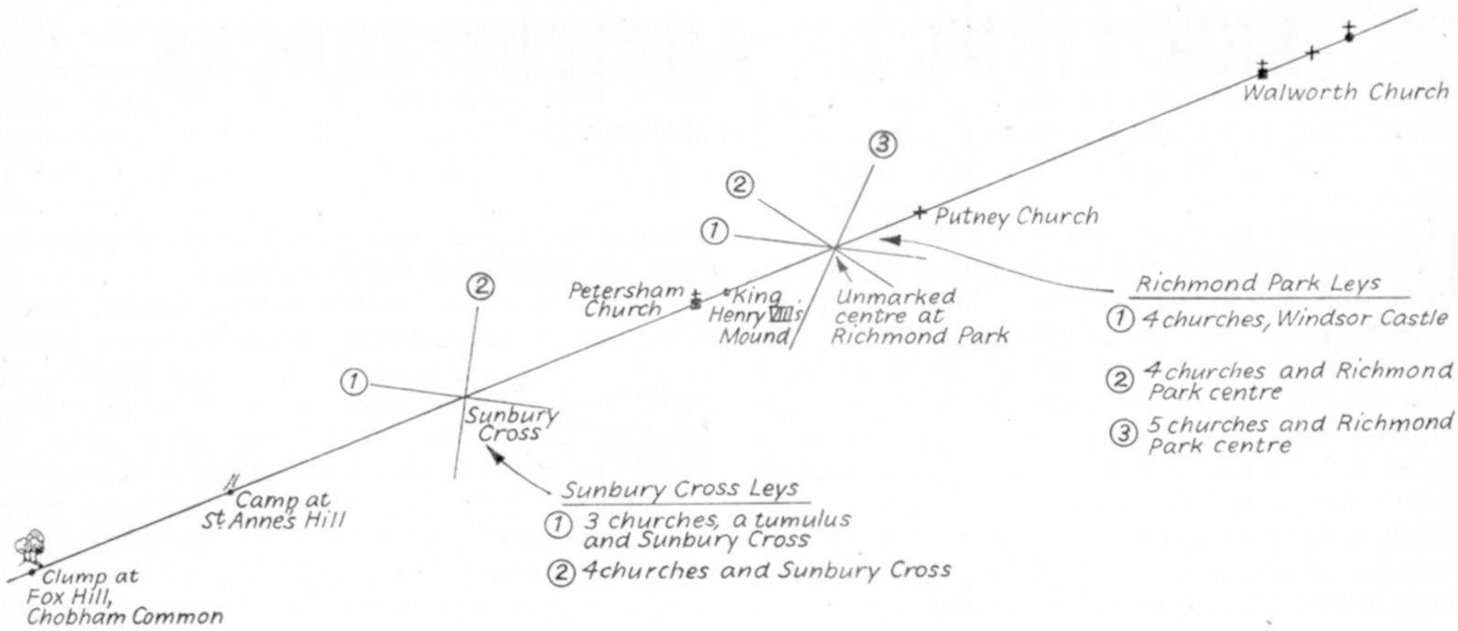
A vast system

The system is so vast that it cannot possibly be accounted for by coincidence. Before a ley is accepted there must be at least seven points in exact alignment, exclusive of stretches of straight track, and a centre must have at least three of these lines running through it (there are so many leys running in all directions that it is inevitable that there should be many cases of two leys crossing. These crossing-points are not centres, and never have a monument). Even under these stringent conditions, however, a great number of leys and centres can be found on any ordnance survey map.

As you will see from the Leylands Farm incident, place names play a very important part in the finding of the leys. Obviously the word "ley" (sometimes "lye") has this significance; Cross Leys and Lyewood Common are two examples. Other words to look for are "cold" (or "cole") as in Coldharbour, "dodd" as in Doddington, and "Black" as in Blackley. The word "cross" usually denotes a centre, and "mark" as in Keston Mark and Markbeech is also important. Leys have also affected the etymology of our language in other ways. It is still commonplace to talk of "taking the lay of the land," and if an ancient traveller was "delayed," or wandered off the straight track, it could add days to his journey.

Watkins surmised that the alignments had been formed by the ancient people to take their bearings from when on a journey. I have no doubt that they were used thus, as it is evident that when the leys were in use at least one mark point was always in view, but I am equally sure that these primitive

* A few copies of THE OLD STRAIGHT TRACK are available from the John M. Watkins Bookshop, 21, Cecil Court, London, W.C.2. at 9s. per copy (postage, 1s. 6d., paid).



A typical ley

men could not possibly have built them with such accuracy. Without modern surveying instruments there would have been discrepancies cropping up, perhaps only of a few degrees, but enough to make the plotting of leys impossible. However, they are obviously artificial, so who could have supervised the building of them? Obviously great scientific and technical knowledge was needed.

Black magic legends

The answer might lie in the legends connected with the tracks which exist in various parts of the country. In Ireland it is the Leprechauns who dance round the stone circles, and in this country tales of Black Magic remain. This in its original form was not evil, though the Christians, who did not understand it, tried to make it appear so. In actual fact it was a most potent natural science, of which there is only a vestige left today, the word " black " referring only to the colour of the clothes worn by the participants. This is probably the same word which appears in ley place names. Keston Mark, to take one example, has black magic legends attached to it, and these, of course, include "flying broomsticks" that the witches were supposed to have ridden on. Could not the latter have been the same phenomenon as the " flying saucers " of today the accounts much mutilated by time?

Surely it is more than coincidence that leys and Orthotenies (Aimé Michel's discovery of the alignment of flying saucer sightings) are so similar? Both types of alignment converge on " centres," and it has been found that many leys are also Orthotenies, and vice versa. They will even converge on each other's centres, and the more that is discovered about each the more linked they are found to be. Could it be that the intelligences behind the flying saucers built the ley markers for navigational purposes, or perhaps in order to find readily a form of magnetic current that is helpful to them? It is a theory that is extremely difficult for the scientist to swallow, but the mounting evidence in the files of the Ley Hunter's Club all seems to point in that direction. Mans' earliest trackways could well be the key to one of the most topical mysteries.

A LANDING AT COSFORD?

More confusion at the Air Ministry

THE first public intimation of the mystery appeared in the *Wolverhamption Express and Star* on January 7, 1964, when this paper mentioned reports of a flying saucer having landed at Cosford R.A.F. training camp, about three miles from Wolverhampton. Previously, a report of this occurrence had appeared in *Orbit* the journal of the Tyneside UFO Society. Its Editor, Mr. J. L. Otley, was able to amplify the rumour in a letter to the FLYING SAUCER REVIEW: " Cosford is a training station — not operational. Between 11.30 and 12 midnight, two young R.A.F. types were looking over the airfield. A bright dome-shaped object came down out of the sky and went behind a hangar. They could still see the very top of it — or glow from it, so it must have been very close to the ground if not actually on it. (The hangar apparently houses only Chipmunk training planes.) From the object came a green beam which swept around, searchlight fashion. The two watched it for perhaps two minutes and shot off to tell the duty officer, but by that time the thing had gone."

"The two were interrogated at length by the Camp Commandant and fellow officers. The sighting was reported to the camp over its own 'closed circuit' radio. A couple of days after this incident, a Vulcan landed at the station. (The inference here is that this was a first-time for this large craft.)"

A British Railway signalman is also alleged to have witnessed the incident from his box, though subsequent enquiries have failed to confirm this.

Meanwhile, in London, the FLYING SAUCER REVIEW caused a number of enquiries to be made. At Cosford a flat denial was made that any incident at all had occurred. It can be mentioned here that it is the REVIEW'S technique to bombard the authorities with questions of a varying nature which appear to be coming from a number of unrelated sources. In only one or two cases is any mention made of flying saucers. References are freely made to hoaxes, secret weapons, meteorological freaks and the like.

The Air Ministry's first reply was that two young students, not altogether sober, had been up to some pre-Christmas prank (the incident is alleged to have occurred on December 10 or 11, 1963). When pressed, the Air Ministry said there was to be an inquiry into the incident. The spokesman was immediately asked why an inquiry was necessary. There were some sketches, he said. Could the sketches be seen ? No, the R.A.F. did not possess them, was the reply. How then could they hold an inquiry? The answer to this question tailed off into incomprehensibility.

The matter was allowed to rest for a day or two. The next time the Air Ministry was approached the reply had altered. The drunken students had become sober apprentices who had practised a hoax. What sort of hoax? They had apparently constructed their own saucer and this was the cause of the scare — which Cosford itself, by the way, had totally denied.) Once again the explanations became incoherent. By this time, even those who were quite prepared to accept the hoax theory became incredulous. Something very odd must have happened at Cosford that night. The oddest part of the story is, perhaps, the lack of liaison between Cosford and the Air Ministry in London. It will be impossible to keep the UFOs secret much longer if the branches of the R.A.F. are out of touch with their Head Office.

The incident was fully investigated by Mr. Wilfrid Daniels of Stafford. An extract from his report reads as follows : " On Thursday morning, January 9, 1964, I motored over to Albrighton, close to which is situated the R.A.F. Technical Training Establishment, 'R.A.F. Cosford,' on the West side of A.41, Wolverhampton to Newport, Salop.

" In High Street, Albrighton, at about 11.15 a.m., I came face to face with a young man in clerical garb. When I asked him if he were the Vicar of Albrighton, he replied, 'No, I am the Chaplain at the R.A.F. Station.'

" I pressed questions on him and he replied with a show of interest as I identified myself and my reasons for being so inquisitive, but his answers were obviously guarded. I said, 'Do you konw the two lads concerned in this business?' and he replied 'Oh! yes, I've talked about it to them and they really believe they saw it.' I said, 'How did they describe the thing — what shape, what colour?' To which he made the following reply: 'They said it looked like what you

(Continued on page iv of cover)

A QUESTION OF TIME

by ADRIAN R. COX

Time is one of the two aspects of speed. Vast distances in space can be minimized by an increase in speed. Are there any limits to speed? This article attempts an answer.

I'M afraid it is *quite* impossible. Even if you could build a space-ship which could contain all the supplies and fuel to get it to its destination and back again, and even if you could solve the problem of keeping the crew sane and healthy, to say nothing of the problems of Celestial Navigation, etc., you could never even reach the nearest star system." I am sure many readers of this magazine must have heard that sort of thing. It is one of the classic ways of saying that UFOs are just too improbable to be taken seriously.

A Relativistic preamble — Time Dilatation and some of its consequences

One of the many reasons behind the type of statement I have "quoted" above is the problem of time dilatation.

I apologise in advance for what will be a very elementary and rather lengthy survey of one of the predictions of The Special Theory of Relativity. I feel it ought to be done for the sake of those readers who are not too familiar with the theory of Relativity. It also lays a solid foundation for the thoughts contained in the section headed "Tempic Fields."

Time Dilatation means, in effect, that as one approaches the speed of light relative to, let us say the earth, time slows down. For example, if one is going at 99.5% of the speed of light, one's clocks will be going at only 10% of the speed they were on earth. This slowing down effect will only be seen by someone actually *on* the earth, and *not* by the man who is moving. Normally, of course, one expresses all this mathematically. There are several ways in which the equation can be written. One of the easiest to use is the Lorentz Transformation Equation :—

Equation 1.

$$t = t^1 \sqrt{1 - \frac{V^2}{C^2}}$$

Key: We will assume there are two people moving relative to each other; they are "A", whom we will consider to be on the earth; and "B" who is moving away from the earth in a space ship.

Therefore :— t = The time on "B's" clock as seen by "A".

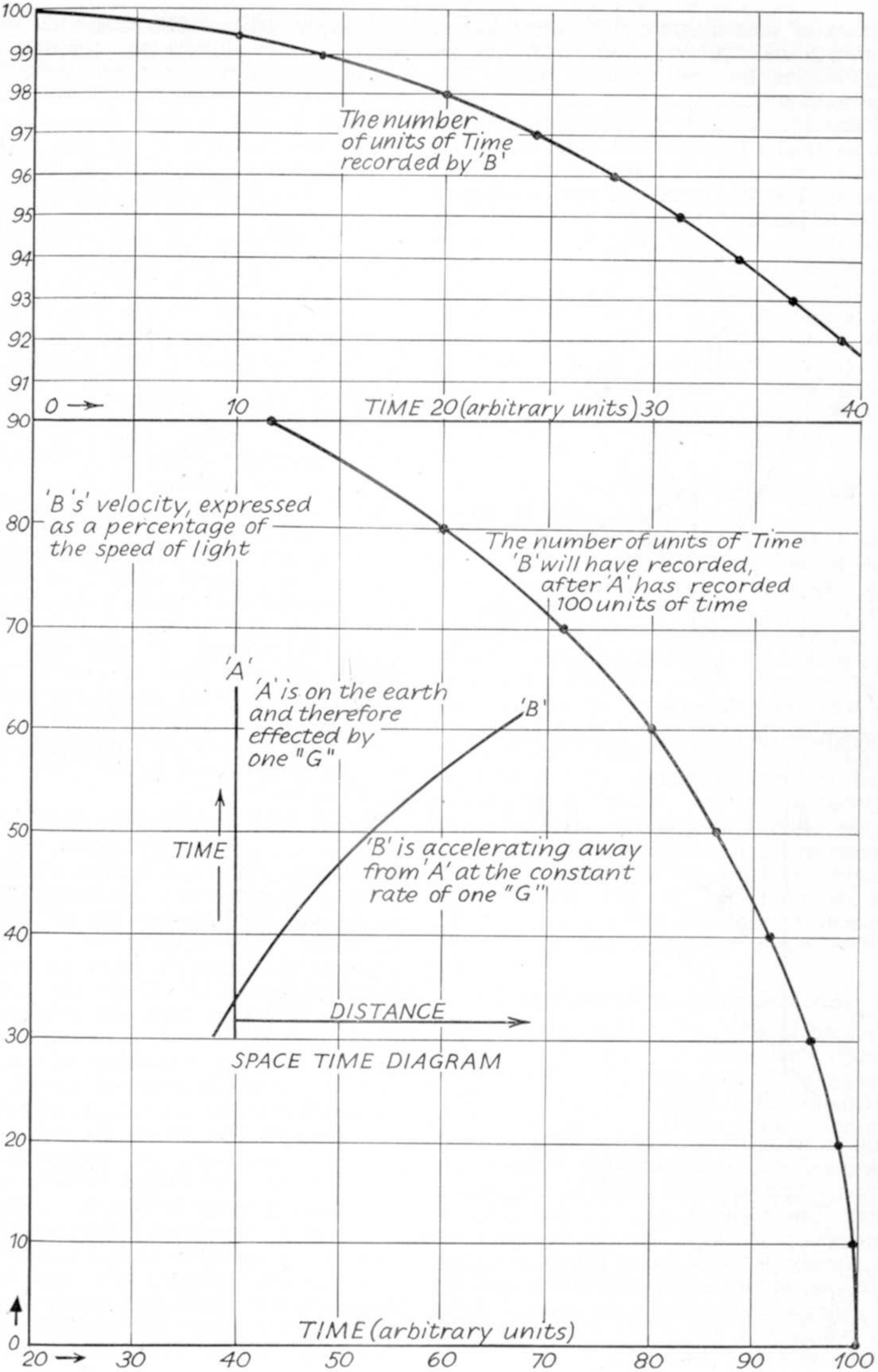
t^1 = The time on "A's" clock.

v = The velocity with which "B" is leaving "A".

c = The velocity of light. (186,000 miles per second).

Let me give an example of what this could mean in practice. We will suppose that a number of people decide to make a journey through space. They decide that their journey will last 40 years by their clocks, and also that they will accelerate at no more than one 'G' (i.e. one earth gravity), and further that this acceleration will be continuous throughout the trip. This means that when they have virtually completed half the journey, they will turn their space ship round and gradually decelerate until they come to rest. They will then immediately accelerate again, repeating the whole process as they finally land on the earth. Their journey will have taken them 40 years exactly by their own clocks; however on the earth no less than *500 years* will have passed. (Note: for the purposes of the above example I have ignored the time taken in acceleration and deceleration, both on the way out and on the return journey. They would have to travel at about 99.7% of 'c' for them to experience the degree of slowing down needed).

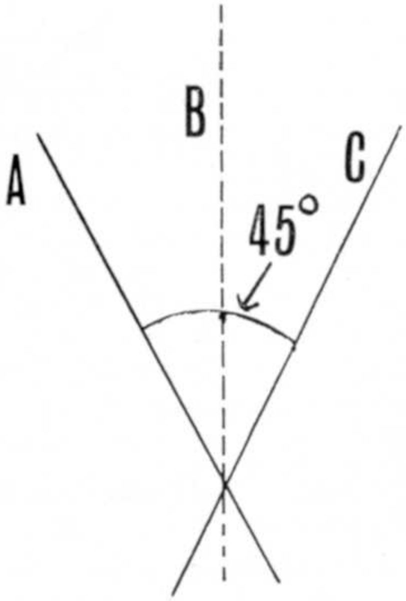
The time dilatation effect can be shown by means of a graph. In this case the speed of light ('c' of Equation 1.) is taken as 100%, and "B's" velocity is therefore shown as a percentage of 'c'. In the facing Space-Time Diagram I have shown "B" with an acceleration of one 'G'. This allows the graph to be drawn as a curve, and also avoids some of the predictions of the General Theory. Notice the gradual flattening of the curve as "B" approaches the speed of light.



100
99
98
97
96
95
94
93
92
91
The number of units of Time recorded by 'B'
0 →
10
TIME 20 (arbitrary units) 30
40
90
80
70
60
50
40
30
20
10
0
'B's' velocity, expressed as a percentage of the speed of light
The number of units of Time 'B' will have recorded, after 'A' has recorded 100 units of time
'A'
'A' is on the earth and therefore effected by one "G"
'B'
TIME
'B' is accelerating away from 'A' at the constant rate of one "G"
DISTANCE
SPACE TIME DIAGRAM
TIME (arbitrary units)
20 →
30
40
50
60
70
80
90
100

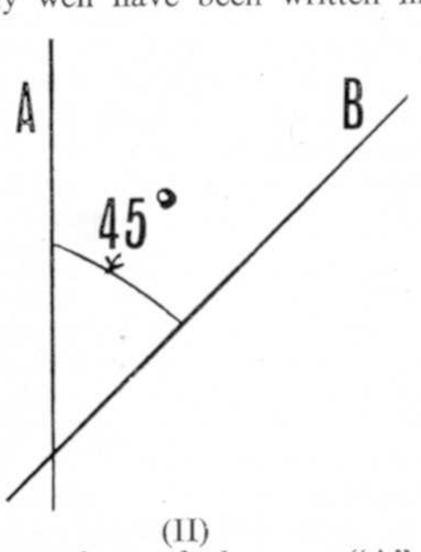
In the space time diagram "B" is considered to be moving, and "A" is at rest. However, as the late Wilbert B. Smith pointed out in his lecure printed in the November-December, 1963, issue of this REVIEW, there is nothing on the face of it to say that it has to be "B" who is moving and not "A," except that I happen to have drawn it that way. The whole point of relative velocity is that it is precisely what it says — relative. Thus :—

Figure 2



(I)

could equally well have been written like this :



(II)

In both cases the angle between "A" and "B" is 45 degrees, and in a space-time diagram this means that their relative velocities are exactly the same. The positions of "A" and "B" are therefore interchangeable. In the first drawing, "C" is merely the mid-point put in for easy reference and no more. Now if I understand the Special Theory aright, it is *only* the *relative* velocity which will effect the relative rates at which time will pass for "A" and "B".

However, when we consider the problem in the context of a journey through space, we would find that the positions of "A" and "B" were no longer reversible. I am not too sure why this should be, but there are some clues which seem to support the idea. One of the most interesting is provided by the Synchrotron. These giant accelerators prove another of the predictions of the Special Theory — the one which says that as one approaches the speed of light one's mass will increase. In this case a 'pulse' of particles is accelerated to very near the speed of light (in fact they have been able to get electrons to within 1/10th of a mile per second of the speed of light, which is equivalent to 99.99999% of 'c', and they found that their mass increased no less than 900 times).

There is an example of the proof of time dilatation to be found in the atomic 'splinters' produced by the collisions of Cosmic Rays with atoms in the upper atmosphere. When this happens the nuclei of the atoms are disintegrated and some very strange particles are produced (for example the positron which is an electron with an opposite charge). These particles are fantastically short-lived, but because they are travelling so near the speed of light they 'live' long enough from our point of view to be recorded at ground level. The life-span of some of them is measured in million millionths of a second. However, it takes a few thousandths of a second to reach ground level, so the slowing down effect is enormous.

To get back to our space ship. Our galaxy takes the place of the synchrotron, and the rapidly moving space ship the electron. Relative to the speed of the space ship, the planetary and stellar movements within the galaxy are virtually negligible. The internal galactic speeds are measured in hundreds of miles per second, whereas we are dealing with 170 to 180 *thousand* miles per second. If we work out the time dilatation effect of even 1,000 miles/second, we find the slowing down is something of the order of 0.000015 seconds in every second, which is surely insignificant beside the effect described in the case of the 40 year journey above.

The Tempic Fields

In the second of Wilbert B. Smith's speeches he made a very brief reference to something called the Tempic or Time Field. This section of the speech has given me some considerable thought, and I would like you to share (but not necessarily to agree with) some of my ideas. I will leave aside any considerations of the relia-

bility of the data presented by Mr. Smith, and make the assumption that what he said is correct. Most of my ideas flow from the Special Theory. I will deal with them in sequence.

1. The velocity of light will *always* be 186,000 miles per second.

This sounds like a rather sweeping statement, but is really obvious if one examines it. In the case of an observer whose tempic field is stronger than our own, light will still travel at the same speed *for him* as it does for us. It would be only when we compared a standard time interval, for example a second, that we would find any difference between us. Although a second would feel as long to him as it does to us, as far as *we* are concerned, his second would be a very much shorter interval of time.

2. Time - Speed is quite as relative as Velocity.

There is *no way* in which one observer can find out how fast his time is going unless he can contact another observer whose tempic field is different. This is exactly the same problem we have when we try to measure velocities. For example, there is no way of finding out how fast an aeroplane is going from any experiments performed *within* the plane itself. This means that time-speed by itself has no meaning, so one must refer to some other time speed with which to compare it. To go back to the point in No. 1. above; a second would not only feel as long, but would indeed *be* as long for the observer in the stronger tempic field, and no one could prove that it was otherwise.

3. When two time fields differ, and their difference is increasing, there will come a point when an observer in the weaker field will lose contact with the stronger field.

To explain this let us imagine two observers "A" and "B". 'A's" tempic field is constant and unchanging; while "B's" field is steadily increasing in strength. As "B's" field increases there will come a point when the orbital velocities of the electrons, and then the nuclear oscillations of his atoms will, as seen by "A", equal the speed of light. At this instant "A" will lose contact with "B". Something interesting now happens: "B" will not however lose contact with "A", and further, he will be able to watch everything "A" is doing without being seen himself. I wonder if some of the UFOs keep a watching brief on our activities this way. The reason for "B's" disappearance is contained in another prediction of the Special Theory which states *if* matter could be accelerated to the speed of light it would not only require an infinite quantity of energy, but would then itself *be* energy. Everything about "A" would seem to be extremely sluggish to "B", with the exception of anything actually travelling *at* the speed of light. Let me explain: in the discussions about time dilatation we said that the slowing down effect grew more and more marked as one got nearer the speed of light. Well the whole point is that if one could travel at the speed of light time dilatation would produce 100% slowing down of time, i.e. time would stand still. Since, by definition, a light wave travels at the speed of light, time for it is non-existent, so it could travel quite happily through all kinds of tempic fields because having no time itself, it is unaffected by time. There seems to be some deep truth here about the nature of things which would be well worth following up some day.

4. The flow of force in a Tempic Field is the passage of time.

The idea being that the flow of time in a tempic field is analogous to the flow of electrons in an electromagnetic field. The same applies to a gravitational field, but no one yet seems to have found the expected "gravitons." This is a very difficult concept to put over. The trouble is trying to find a suitable analogy. It has to be something one can "feel" as a part of everyday experience, and time like gravity is definitely something which is felt. Therefore one would assume that an estimate of the intensity of a tempic field is a measure of the "speed" with which time passes. However, it is obviously not quite as simple as that, because a measurement of the intensity of a tempic field is something which possibly can be expressed only relatively. If this is so, it puts it rather outside the other fields; but that remark may just be due to my ignorance of Tempic Fields!

An application of Tempic Fields

One of the most obvious uses of tempic fields is in space travel. The possibilities opened up are fantastic; for example there is the opportunity of travelling many hundreds or thousands of light years at very near the speed of light, and making use both of the Special Theory and the advantage of *not* returning from the journey 10,000 or even a million years later as far as the home planet is concerned. Even inter-galactic travel *could* be possible provided one could produce artificially an intense enough tempic field for the space ship to travel in. Let me take the example of the 40 year journey mentioned in the first part of the

(Continued on page iv cover)

World round-up

of news and comment about recent sightings

ENGLAND

More work for the bomb disposal squad

The Nottingham *Guardian Journal* on November 26, 1963, carried the following report: "A bomb disposal squad from Sussex were yesterday drilling in a field at Home Farm, Belton, near Grantham, after a tractorman had reported a hole appearing in the ground. Home Farm is owned by Lord Brownlow. Three of the squad have been sleeping in a tent only a few yards from where they have been drilling.

"Capt. J. E. Rogers, Officer Commanding No. 2 Troop at Horsham, said last night: 'So far nothing has been found to suggest that there is actually an unexploded bomb in the field. We have been drilling in the vicinity and inserting metal locators in an effort to trace any metal which could indicate the presence of a bomb.'"

(Credit to Mr. L. Taylor)

Mystery at sea

We are indebted to Mr. Harry Lord for having sent us the following cutting from the *Northern Echo*, dated November 22, 1963:

"The Aberdeen collier Thrift arrived in Blyth at noon yesterday eight hours overdue after an unsuccessful search off Girdleness for a mystery object, which disappeared into the sea three miles astern of the ship. The Thrift was heading south for Blyth when shortly before 6 p.m. on Wednesday evening four members of her crew including the skipper, Capt. J. Murray, saw a 'flashing red light' which passed within a mile of her port side, 15 to 30ft. above sea level, and suddenly disapppeared three miles astern.

"Capt. Murray alerted Stonehaven radio, put his vessel about and made for the spot where the light had vanished. The collier had two radar contacts on her screens, but when she reached within a quarter of a mile of them, they disappeared. The Thrift searched for three hours, circling the area several times and was joined by lifeboats from Aberdeen and Gourdon, a Shackleton from RAF Kinloss, which dropped flares on to the surface, and a B.P. transporter. They discovered no traces of wreckage, however.

"The Thrift gave up the search at 8.50 p.m. and went to Blyth, being further delayed because of bad weather.

"'We could not make out what the light was,' said Capt. Murray. 'It passed about three quarters of a mile off our port side, flashing brilliantly until it disappeared. It made no noise at all, yet we could hear the Shackleton when it was miles away. Judging by the way the radar contacts disappeared from our screen it seems that whatever was there must have sunk before we could get to it. We found no trace of wreckage during our search, but something definitely fell into the water.'"

Lorry driver followed

We are indebted to Mr. Derek Barnes for sending us a copy of the December 6, 1963, *Hereford Citizen and Bulletin* from which the following account is taken: "Wormelow lorry driver Mr. Tom Walker is convinced that he has seen a flying saucer—he can't think of any other name for it. His friends at Bristow Brothers, Coningsby Street, Hereford, don't know whether to laugh or not. Tom (26) is known as reliable and sober-minded.

"Driving home to Grove Cottage, Wormelow, Tom saw something appear in the sky at Johnson's Garage Callow. It was about the size of the full moon, and very bright, he told our reporter.

"This was in the early hours of the morning, but it wasn't the moon, says Mr. Walker.

"'It was low down beside me and not far away and it began to follow me. It moved beside me all the way up the Callow and home to Wormelow. What made it stranger was the fact that when I reached home it soared up into the sky and disappeared. I'm not a person to make these things up,' he said.

"'There was nobody else about at the time which made it all very eerie.' He added that he had seen something of the kind before in the Wormsley area.

"Have any other Welsh-English border residents seen anything of the kind, or was Mr. Walker singled out by Martian visitors?"

Landing in Essex

From the *Times and West Essex Star* for January 3: "Only days after publication in this newspaper, of an article on unidentified flying objects three local youngsters—one a Buckhurst Hill girl—claim to have seen a flying saucer land in a field at the Ivy Chimneys Riding School, Epping.

"An urgent phone call at our office on Monday came from 16-year-old Pauline Abbott, a trainee riding instructress at the riding

school, Pauline, who lives in Ardmore Lane, Buckhurst Hill, said she was riding her horse into the yard of the riding school when the animal stopped, and refused to move.

"'I heard a squelching noise coming from the field,' she said. 'I shouted, and the thing took off. I just stood there, I was too scared to move.'

"But Pauline wasn't too scared to investigate. When she got to the field, she found deep, indented marks in the field.

"'It was about eight feet across, and one and a half feet deep, with four lines radiating from the circular marks, and "cup" marks at the end of each line.'

"Hearing that Pauline had revealed her discovery, other people came forward with similar evidence, that the object was 'flat, white, and shiny, and silent.'

"Carol Foster, 18, of Maida Avenue, Chingford, and Robert Eing, 13, of Colebrook Lane, Loughton, both claimed to have seen the object in the sky early in the morning. 'It had a dome on top, and was flat, round, and shiny.' they said. Questioned by reporters, the two said: 'People tell us we are mad but we know what we saw.'

"This is the second time that an unidentified flying object has been seen in the area. The first was in 1958, when similar marks, and some deposits were found."

SOUTH WALES

Policeman's sighting

We are indebted to Mrs. G. E. Blundell for sending us the following account written by P.C. David G. Curtis of 52, South Road, Porthcawl: "At 3.15 a.m. on Sunday, December 22, 1963, I was on duty in Philadelphia Road, Porthcawl. It was a clear night with countless stars. I was looking straight ahead of me when suddenly my attention was distracted by a large light in the sky above me. At first I thought it was just a large brightly glowing star, but on closer observation I could see that it was too huge for a star. It was a bluish-white glow, cylindrical in shape, and was quite steady. Suddenly, at tremendous speed the object just flashed across the sky and disappeared. I would say that the object was in my full view for about 7 or 8 seconds. During that time I made contrast to other stars, and the object definitely had a bluish glow about, and without doubt was too large for a star."

What four children saw

During the last week of November, 1963, four pupils at the Cadle Junior School, Fforestfach, near Swansea, declared that they had seen a flying saucer. Their description, according to the *South Wales Evening Post* on December 3, 1963, read as follows: "It was shining and then went dim and disappeared into space. It was a round shape as if it were flattened. It was like a hovercraft. It had three spikes sticking out of it. It had a propeller which was turning underneath it."

Confirmation was to come from a disbeliever, Mr. Victor Morgan and his wife of Llangyfelach Road, Brynhyfryd. His description ran: "I managed to fix a pair of binoculars on it. It seemed to be very high and large and was travelling in a jerky manner. It suddenly streaked away into the distance."

On December 7, 1963, the *South Wales Evening Post* printed a letter from an anonymous reader living at Neath in which he added his own testimony: "I would like to endorse the claims of some children in Fforestfach who reported (*Evening Post*, December 3) that they had seen a strange object, of the type known as 'flying saucers,' in the sky last week.

"On Friday, November 29, I also saw a strange round object that appeared to come from the Neath Abbey direction and then went in a westerly direction over Mynydd Drumau towards Birchgrove. It was a clear afternoon when I watched it pass slowly across the sky. It shone very brightly, but there was no sound, as might have been heard from an ordinary aircraft, at all. As it approached the mountain it emitted a bright red glowing flame, of considerable length, that appeared to come from the back of the object. This flame resembled that which might be seen when fuel burns in an ordinary rocket.

"I watched this strange craft, flying saucer, call it what you may, for the space of about three or four minutes, until it finally disappeared from view. Its strange round size and bright shining appearance made me positive that it was certainly no conventional aircraft.

The slow speed at which it moved and the definite course it followed removes any suggestion that it might have been a meteor.

"There have been many sightings of such mysterious objects around the Swansea area in recent months. The authorities have tried to fob us off with stories of weather balloons, high altitude aircraft, and other such things, but no satisfactory argument has yet been offered to explain these strange, eerie happenings."
(Credit to Mr. John R. Francis).

PORTUGAL

UFO at sea

We are indebted to Mr. Barrie Pottage for sending this account written by Second Officer Knud Rasmussen. The sighting occurred on September 14, 1963, when the Danish t/t *Kristine Maersk* was 80 nautical miles off Oporto, Portugal. The sky was clear with 7-8 miles visibility. Knud Rasmussen's account reads as follows:

"An unidentified flying object appeared bearing 210° altitude 35° as a star with a glare around it. On approaching on a course of 330° (which was maintained throughout the observation) it seemed to come closer to the sur-

face, but then obviously kept the same height at altitude 25°. Coming nearer, the object appeared as a brilliant green light, not exactly green but more like the colour of phosphorescence. There was a faint green and orange tail which may have been caused by the bright phosphorescent light or its very high speed. Ahead of the green light were 10 to 15 orange or red lights ending with a purple light. When abeam these small lights looked like long rows of portholes, but they seemed to be changing position. The only two lights that seemed to keep the same distance from each other were the green and purple lights, and the angle subtended by them was from five to seven degrees. There seemed to emerge a much smaller object from the larger object, although it may have been another and more distant object which travelled at the same speed, though perhaps a little higher. The object was travelling at a very high speed impossible to compare with any speed known to me. It was also impossible to estimate its height, but I think the object was rather more distant than it appeared. No sound was heard, and I checked the magnetic compass a little later and found no interference. I observed the object for about 25 seconds, most of the time through binoculars. The object was definitely no aerolite nor an aircraft, although to begin with I did think it was a burning aircraft. It did not appear to be a rocket for it should not have followed a horizontal course. I can only say that it was a thing I have never seen before."

AUSTRALIA

Square windows

The South Australia *Adelaide News* printed the following account in its July 24 issue: "A strange flying object with square-lighted windows has been reported hovering over Northfield and Yatala on Monday night.

"The report was made today by a 38-year-old railway examiner, of Hillcrest Gardens, who said the object glowed with a 'bright white light from the windows in it.' The man's name and address can be supplied to genuine inquirers.

"He said: 'The object seemed to be revolving and hovering just under a layer of cloud. I was cycling along Hampstead road about 6.35 on Monday night when I first saw it. I was able to watch it for about five minutes before it seemed to speed off toward Port Adelaide.'

"He said there was no noise from the object, and he was sure the sighting was not that of an aircraft nor was it caused by trick lighting.

"The man, who is employed at Adelaide Railway Station, is married with four children. He said he had never before seen an object like this. From the distance he estimated it to be about 300ft. in diameter.

"Like others who have seen unidentified flying objects in South Australia this year, the man will tape record his impressions of the object for the SA branch of the Australian Flying Saucer Research Society.

"Adelaide police received another report on Monday night that a Joslin woman had sighted a similar object hovering in the sky to the north-east of her home."

THE LAST LAUGH

Reproduced from the January 7 issue of the London *Daily Mirror* by kind permission of the Editor.

MAIL BAG

Correspondence is invited from our readers, but they are asked to keep their letters short. Unless letters give the sender's full name and address (not necessarily for publication) they cannot be considered. The Editor would like to remind correspondents that it is not always possible to acknowledge every letter personally so he takes this opportunity of thanking all who write to him.

Cut and thrust

Sir,—In your November-December issue you state, without having even seen my Orthoteny article, that one of my points "concerns the absurdities of the incidents reported all over France in 1954. The REVIEW has tried to warn him that he is begging the whole question, for he will merely be left with an even greater mystery than the one he seeks to demolish. Why are these absurdities, as he calls them, strung out in a straight line?"

I think that the REVIEW owes an apology to me and its readers for the above erroneous statement. First of all, no one — including the REVIEW — has tried to warn me of the pitfalls of Orthoteny. Second, I have not used the "absurdity" of the sightings as an argument against Michel's claims. I have shown, by proper and accurate statistics, that the host of straight lines is the result of chance alignment. My conclusion does not depend on the validity of the reports. Finally, I have not *sought* to demolish the "mystery." Wade Wellman, in a letter, asked me what I thought of Orthoteny and sent me a copy of the REVIEW containing Michel's recent article. I said that I had not been impressed with Michel's statistics in the original French edition. I then obtained and read the U.S. edition, with Mebane's analysis. You have seen the result of my study. I think that qualified statisticians will find it convincing. I know that Michel, Vallée, and others will not like it. I have not tried to "demolish these facts." I have only shown how wrong are the conclusions they have drawn from them.

A further point. On page 2 you maintain that facts are the best armour of the saucer believer — facts like those presented by Michel and Vallée. Facts rather "than the ignorance and prejudice on which the Menzels and Moores of this world have so unwisely staked their reputations."

I shall overlook the crocodile tears. But my approach to Orthoteny, as for other phases of flying saucers, has been via the facts. I am somewhat disappointed in the REVIEW. In earlier issues I thought I detected some objectivity. Now I find false statements, insinuations, and even insults. My only aim is the search for truth. I do not claim 100 per cent infallibility. I shall frankly admit any errors I may commit. But I assure you that I am neither a swallower nor a producer of propaganda, nor have I used ridicule as a weapon. As for prejudice, did you not make the statement referred to above deliberately to discredit my work in advance and prejudice your readers against me? Or are they an advance defense or apology for printing the heretical words of a non-believer?—Donald H. Menzel, Harvard College University, Cambridge, 38, Massachussets, U.S.A.

(No unfairness was intended, but even if it was felt we apologise. Dr. Menzel should realise, however, that when two sides hold such diametrically opposed views on flying saucers there is bound to be some cut and thrust. Dr. Menzel himself is no mean thruster judging by his article in this issue. He may prefer the handle of the sword, but he must occasionally suffer from its point. —Editor).

Global Orthoteny

Sir,—Regarding the two Great Circle lines (Bayonne-Vichy and Po di Gnocca — Southend) that aroused comment in the REVIEW for November-December, 1963, I have tried determining *experimentally* their paths on the globe. It seems to me, as was suggested by another reader, that these two lines are in fact at right angles to each other. Furthermore, as far as I can tell, they both make an angle of 60% to the equator, and the Po di Gnocca line seems as if it might pass over the South Magnetic Pole. Would this be sufficient for the extra-terrestrials to "fix" two Great Circle Lines, perhaps as two great base lines for the rest of their global activities? A further point: When a thread is stretched through the South Magnetic Pole and the South Geographic Pole, it passes through the Fortaleza region in N.E. Brazil, and Papua in New Guinea, which regions are also at the same latitude. — Peter J. Kelly, 31, Sycamore Road, Hollybank, Hythe, Hampshire.

A tempic field phenomenon?

Sir,—One evening—I think it was during the winter about fifteen years ago—my wife and I were sitting by the fire reading when suddenly there appeared on the fire a small luminous crescent of light which after travelling in an arc from the top right-hand corner disappeared in the bottom left-hand corner of the fireplace.

Oddly, its disappearance at the right-angle of the surround and the hearth was as if it had been

a solid object, i.e. bit by bit it vanished under the floor. Reading the late Wilbert B. Smith's speech in the November-December, 1963, issue of the FLYING SAUCER REVIEW in which he speaks of flying saucers appearing very small because of the increased tempic field in their vicinity, I am wondering whether we saw one of these monitors and whether any other readers have had a similar experience. Would not its appearance also indicate that it was moving in a different kind of space? — Arthur E. Hedges, 117, Mackie Road, Filton, Bristol.

Anti-gravity

Sir,—It may interest you to know that at the Institute of Directors Annual Conference at the Royal Albert Hall on November 6, 1963, which I attended, a question was put to Sir Solly Zuckerman, Scientific Adviser to the Ministry of Defence and Chairman of the Defence Research Policy Committee since 1960, by John Connell of the Noise Abatement Society.

The question was, and I quote: "As so much civil development comes from money spent on research on defence, as Sir Solly has rightly remarked, will he tell us if he heard a rumour that Russia had produced a silent antigravitational aircraft and engine, how much would he advise the Government to spend on producing a similar thing here?"

The answer given by Sir Solly was: ". . . I would be quite incapable of saying what I would advise the Government, what proportion of all resources available for research and development it should devote to this objective, if indeed there is such an objective."

It is significant that Sir Solly in his reply first appears to admit the existence of this project and, then, possibly realising his mistake, proceeds to deny it.—L. L. Nenk, 54, Armitage Road, Golders Green, London, N.W.11.

Life on Mars

Sir,—After some deliberation, I have decided to answer the criticisms brought against me by Aimé Michel in FSR for November-December, 1963. He rebukes me for ignoring the researches of Struve and Sharples, and especially of Shklovskiy, on the satellites of Mars. I confess that I knew nothing of the speed measurements by Struve and Sharples until I read Michel's letter. However, Michel admits that their results for Phobos are disputed at the Paris Observatory, and this admission is enough to leave the issue wide open. As for Shklovskiy, I certainly knew about his work in this field, but I was not familiar with his latest book, *Reason in the Universe,* published in Moscow. So far as I know, the book has not been translated into English, and since I cannot read Russian I can hardly be blamed for overlooking this.

Michel criticizes me for passing over " the work of Sinton and Dollfuss, who *prove* the existence of life on Mars." If any such proof has been found, I'd be curious to see it. I am not a professional astronomer, but it doesn't take a professional to know that the question of native intelligence on Mars is far from settled and that most of the accumulated evidence is negative. Anyone who cares to be dogmatic about it should simply remember that our most powerful telescopes bring Mars about as close as the moon seen through low-power binoculars. Seventeenth-century observers, who studied the moon under feeble magnifications, drew conclusions which ought to make anybody move carefully. Suffice it to say that, speaking as an amateur, I have seen no evidence for a native Mars race which I thought convincing.—Wade Wellman, Box 744, Chapel Hill, N.C., U.S.A.

An anti-gravity machine

Sir,—In 1962 (Vol. 8, No. 5, September - October, p.28) you quoted from a Johannesburg newspaper a report about a Mr. Basil van den Berg having manufactured two magnetic motors by interpreting Adamski's hieroglyphics.

Your editorial in January-February, 1963 (Vol. 9 No. 1) recorded that you had " invited him to England where one of our readers has offered to place a factory at his disposal."

I hoped that these motors, intriguingly photographed in the first article, would prove to be evidence of a satisfyingly concrete kind that could, and would, be publicly tested. Was it, after all, just another of the stories so frequently appearing in the press promising great interest and of which nothing more is ever heard? Or can some other reader produce news of what has happened in the past twelve months?—C. C. Stevens, Friars, Herongate, Brentwood, Essex.

(Our latest information from South Africa is that Basil van den Berg adheres to his claims originally reported in the November-December, 1962, issue of the FLYING SAUCER REVIEW. We regret that we are unable to provide further news at this stage, but we intend to keep pressing for it.—Editor).

UNIDENTIFIED FLYING OBSERVATIONS

The author is Editor of "Analog" and his article is re-printed from the November, 1963, issue by kind permission of the publishers, The Condé Nast Publications Inc. of New York. The article deals in a novel and imaginative way with the problem of saucer photographs. Of all the evidence offered in support of the UFO the photographic evidence seems to make the smallest impact upon the sceptic. If blurred pictures are offered they are dismissed as proving nothing: if they are in sharp focus then are declared to be fakes. This article examines that attitude of mind and illustrates its limitations by trying to imagine what the scientists of the nineteenth century would have said if they had been confronted, had that been possible, with photographs of the many types of now familiar aircraft. Accompanying the article in "Analog" were a number of pictures of such aircraft with captions based on the type of comment offered by the present day sceptic.

RECENTLY I read a fascinating paper discussing the nature of "ball lightning." The paper was written in 1938, before the discovery of plasma jets, plasmoids, and before ball lightning was "respectable." The author was a scientist with the United States Weather Bureau, and he was making a very sincere and careful effort to find the explanation of the observations reported to him. He had collected over two hundred separate observations, from people of all types—housewives, professional scientists, hunters, bankers, farmers — and had analyzed all the reports as carefully and honestly as he could.

He suffered under one serious handicap — not what he didn't know, but something he did know: he knew-for-sure that the phenomena being reported were not, and could not possibly be, anything of a lightning nature. Nothing of electric high-energy-concentration.

Starting with that knowing-for sure what it wasn't, he was, necessarily, forced into the position of explaining away what was actually happening!

His explanations were extremely ingenious and frequently highly imaginative. One of the best he came up with was the Luminous Owl Effect. This is the explanation of ball-lightning observed at night. The Luminous Owl effect involves an owl that has spent the day in a hollow tree that happened to be heavily infested with luminous bacteria, so that when it flies out at night, it appears as a glowing ball bouncing around soundlessly through the air.

There is, hidden under all this thinking, a postulate that he himself was not conscious of: "All these observers were incompetent; the proof of their incompetence is that they report a phenomenon which I know-for-sure cannot exist."

The major difficulty in this whole class of phenomena is that the observed event is of a short duration, cannot be predicted beforehand, cannot be arranged for ahead of time, and concerns something that the non-observer is sure does not and can not occur.

Currently, one of the most widely discussed examples of this is the phenomenon of the UFO's —"Unidentified Flying Objects" technically, but I think that "Unidentified Flying Observations" would be a better term—because therein is the difficulty. The observations are necessarily accidental, very brief, unexpected and hence difficult to interpret. The observations have to be made on the fly! The things may not be "objects," for all we know; a high-intensity energy field of almost any nature will produce a local ionization of the air and can be quite luminous — luminous enough to be clearly visible in full daylight as well as at night. If some such phenomenon were involved, there would be no material "object" present.

And one of the most commonly heard objections on the part of non-observers is, in essence, "If there are so many of these 'flying saucers' around, how come nobody's gotten a picture of one?"

Just for the fun of it, I did a little experimental investigation myself. I can't go out looking for flying saucers to photograph — but I can try something in some ways equivalent. I can try photographing what we'll call for the sake of discussion, "flying crosses." The mysterious flying crosses that have been reported by many people, we'll say, and consider we're investigating the problem about 1893 instead of 1963.

The "mysterious flying crosses," of course, are modern commercial airplanes — transports and private light planes. The observation rules will be that we can't

go anywhere near any airport, and that the conditions usually associated with "flying saucer" observations are applied, i.e. the photographer is not prepared, the observation is accidental, sudden, unexpected, upsetting, and exciting. Those emotional conditions are about the worst possible conditions for getting good photographs, of course.

Now these mysterious flying crosses are reported to have very peculiar characteristics. Sometimes they are heard long before they are seen. Various observers claim they make deep, enormously loud thundering, pounding noises, with a heavy beat like an immense slow drumming. Others say they make a weird howling sound that's a cross between an unearthly scream, and a shriek all mixed in with a dull thundering noise. Still other reports hold that one of the most bewildering characteristics is that they're sometimes observed, quite by accident, immensely remote in the sky, and only *after* they have passed is any sound heard!

Obviously the observers reporting that are simply mistaken, because if the sound is heard only after the object passes, this would mean that the machine was travelling faster, or nearly as fast, as sound itself! Travelling faster than sound is obviously ridiculous; calculations made on the air resistance encountered by something travelling near the speed of sound clearly show that it would require 100,000 horsepower to move any vehicle large enough for a man to ride through the air at such speed. This is more power than the greatest power plant in the world produces. And it is suggested that something with that much power would not be too heavy to fly!

(As of 1893, some such calculations could have been made — and that 100,000 horsepower figure represents allowing them to make a good calculation. Modern jets normally do require something of the order of 35,000 horsepower; not knowing the finer details of streamlining, the 1893 scientists would be certain 100,000 was an absolute minimum. And that any such fantastic power output could be obtained from something as small and light as a modern fan-jet engine would be impossible of imagination in the then-available technology.)

The observations of the flying crosses, moreover, are very unsatisfactory in many ways; some observers report seeing monstrous things half a mile long and with the crossed member almost a third of a mile long. It was reported to be very clearly seen by six or eight people, at a distance of about ten miles, flying just above a hill that allowed them to determine its enormous size.

The speed of the machine was reported to be at least 800 miles an hour.

(So . . . ? So, if you didn't know anything about planes, and saw a modern 707B climbing after take-off, how would you be able to guess its size-distance-speed? Given *any one* of the three, the other two could be deduced; when all three are unknowns, you're trying to solve an equation in three unknowns, with only two equations to work with. So the plane was in fact much nearer than the hill — but there was absolutely no way for the observers to determine this.)

(We will spare the "flying cross" observers the problem of some of the delta-wing hypersonic fighters, and not subject them to a sonic boom. They'll have troubles enough trying to describe something no one ever saw before anyway, without making the problem tougher. We won't even make them try to describe a helicopter to some Senior Authority in mutton-chop whiskers and gold watch chain.)

There will, of course, by the nature of things be three general classes of reports: hoaxes, misobservations, and accurate observations. The hoaxes will fall into two classes; those perpetrated purely for self-satisfaction of some type, and those that might be called lies-for-greater-creditability.

There's the story of the early Irish immigrant writing home to Ireland back about 1847, and telling his home-folks that over here in America he got meat to eat three times a week. An American friend saw the letter, and said, "But why do you say that? You know darned well you're eating meat three times a day!"

"Oh, they won't really believe I have meat three times a week, and they'd know I was a liar if I said three times a day!"

Sometimes people don't tell the truth because they have a better chance of getting a seventh of the truth believed.

Now in the matter of photographs, there will be a similar problem. Some will be hoaxed for the sake of hoaxing; some will be efforts to do, by table-top and model photography, what can't be done verbally—convey what the strange thing looked like. And when these photographs are detected as hoaxes — that, of course, proves all "flying cross" photographs are really just clever hoaxes.

So let's take a look at a portfolio of "flying cross" photographs that do seem to show some strange sort of something . . . but "through a glass darkly" because of photographic, technical, and human-emotional difficulties.

We'll leave out all the pictures of an airplane flying out of the right ear of a handsome young man in prison-uniform-striped bathing suit, and bristling moustache, or the belle of some gay '90's picnic, with a DC8 emerging from her bosom, accompanied by explanatory statements about how the strange drumming sound was heard, and the writer hastily grabbed the camera, and excitedly shot a picture of the flying cross as it passed low overhead . . . only forgetting to turn the film, and so getting a double exposure. ". . . But luckily, the flying cross shows quite clearly on the photograph anyway . . ."

The possibilities of frustration in photographing the flying crosses are immense; the probability of success remote.

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THE SOUTH DUDLEY SAUCERS

Australian Government admits to UFO investigation

MISS SYLVIA SUTTON, the Hon. Sec. of the Victorian Flying Saucer Research Society, has sent a full report accompanied by newspaper accounts of the repeated UFO visitations to Wonthaggi and to nearby Dudley South. The *Melbourne Sun,* on September 21, 1963, stated that almost all the inhabitants of Wonthaggi, an old mining town, saw a moving light above their heads as long ago as last January. This was "explained" as being the planet Venus. Doubts about this explanation were aroused when on September 19, 1962, about half the population watched in awe an object "like an orange beach ball" move slowly across the sky out to sea . . . During the 25 minutes that the mystery object was overheard, television sets in Wonthaggi and South Dudley lost their picture.

On November 7, 1963, the Wonthaggi *Express* carried the following report: "A bread carter was frightened by an unidentified flying object at Dalyston, near Wonthaggi, at 4.15 last Thursday morning (October 31, 1963). He stopped his panel van for 10 seconds in the pre-dawn darkness before driving up a hill beyond which he thought the UFO had landed. When he topped the hill 30 seconds later the UFO was miles away. The bread carter is Jim Davidson, 28, of Hagelthorn Street, Wonthaggi.

"He said: 'It started with a slight glow in the sky to my left. It got bigger as it came towards me. When it reached me it turned and took up my course. It stayed 100 yards ahead, and 80-ft. up. It was 8-ft. to 12-ft. long, and glowed orange, except for two tail fin sections at the rear that glowed red It was weird. It was not metallic or any substance like metal: it was more like a cloud. But it was not a cloud. I followed it for two miles. At times I closed my eyes hard to make sure I was not seeing things. It gave me a fright when it moved across the road to my right, and continued to pace me. Then it moved further to the right, accelerated up a hill, and started to descend. I stopped. I was frightened. I did not want to go on. Then I realized I had bread to deliver to Nyora, and drove on. I expected to see it on the ground the other side of the hill. But nothing was there. I looked around, and several miles out to sea I could just make out a moving, orange glow.

"At the same time as Davidson made his sighting two other breadcarters in three-mile distant Wonthaggi saw a red glow over Dalyston. They are Frank Coleman, 43, of Henry Street, North Wonthaggi, and Norm Veal, 42, of Watt Street, Wonthaggi.

"Veal said: 'We thought it was a fire. But it did not give off the skywards glow of a fire. We watched for a while trying to establish what it was. It was most peculiar. Ten minutes later when we got up into a higher part of Wonthaggi we had another look, but could see nothing. We mentioned it when we returned to the bake-house after our round. That's when we learned about Jim's sighting.'

"*Footnote:* At South Dudley last month, between Wonthaggi and Dalyston, a UFO was seen by 60 people. Last May a youth claimed a mysterious flying object followed his car along a road near Mount Gambier. The youth did not disclose his name because people might think he was 'crackers.' The youth said the object was on the side of the road. When he was within 20 yards a bright light came on and dazzled him.

"He said: 'I pulled up. The object moved across the road, and shot into the air. It hovered above the car. I headed off at 50 to 60 miles an hour and the light followed.'

"Five nights earlier a car load of people reported to Mt. Gambier police that a similar light followed their car for several miles.

"Near Adelaide the following month another motorist reported to Willaston police that a strange, glowing object rose from the roadway at 9.30 p.m. on June 28. The man, who did not want his name used, said the object was about 25-ft. wide, 12-ft. high, and had a concave top and a flat base.

"He said: 'I was within 12-ft. of it before it suddenly rose from the roadway. I was terrified. It rose several hundred feet before it made off at a fantastic speed. I cannot say whether it was solid or made up of gases. But I am sure of one thing: I saw it, and never want another experience like it.'

On November 14, 1963, the Wonthaggi *Express* had more to report as the UFOs returned once again to the area. This paper reported:

"An unidentified flying object has been seen again over South Dudley.

"The sighting was made at 7.50 p.m. last Friday (November 8, 1963) by Ted Colbert, 22, auction room clerk, of Broome Crescent, Wonthaggi, and his fiancee, Jennifer Hughes, 17, shop assistant, of Wishart Street, Wonthaggi. Colbert and Miss Hughes were driving along the South Dudley Road, half a mile from the Bass Highway, when a glow over South Dudley attracted their attention. Colbert stopped his car.

"Colbert said: 'At first I thought No. 5 mine brace was

on fire, but then I realized the orange to red glow was moving slowly. Then I noticed what appeared to be light rays issuing from the top of the glow. We sat hypnotised for a few minutes before we realized it was moving around the coast. We headed for Dalyston, three miles away, for a better look.

"At Dalyston we could see only a faint glow, so we drove on to Kilcunda, four miles on. At Kilcunda we lost sight of the glow, and hurried back to the South Dudley Road. There we could still see the orange-red glow, but it seemed smaller and further away.

"Colbert added: 'I don't know how to explain it . . . it is *impossible* to explain. I do not believe in flying saucers, but I do know I saw something, and would like to know *what* it was.

"Colbert told Colin Lamers, grocer, who works next-door to him in McBride Avenue, of the sighting. The following night, Lamers scanned the sky for 1½ hours with binoculars. He saw nothing.

"At Kilcunda, at 2.30 a.m. on Monday a 21-year-old motor mechanic, of Wonthaggi, saw an object similar to what Colbert and Miss Hughes saw. The mechanic has taken such a ribbing from workmates that he was not prepared to discuss his sighting with the *Express*. In addition he did not want his name used.

"At 4.15 a.m. on Thursday, October 31, Jim Davidson, 28, bread-carter, of Wonthaggi, was frightened by a UFO which, between Dalyston and Kilcunda, paced a van he was driving. At the same time as Davidson made his sighting, two other bread-carters in three-mile distant Wonthaggi saw a weird glow near Dalyston. At South Dudley in September, 60 people saw a similar UFO in the same locality."

Miss Sylvia Sutton, in the course of her local investigations was able to gather much corroborative evidence from several witnesses living in the areas over which the UFOs were sighted.

Miss Sutton adds the interesting information that last July an Australian newspaper published an article ridiculing flying saucers. Although at least seven people wrote to the newspaper pointing out the several inaccuracies in the article, not one letter was published. Miss Sutton in her report to the FLYING SAUCER REVIEW writes: "I then went to see my local parliamentary member for the House of Representatives, Mr. Don Chipp, and was accompanied by another committee woman. We pointed out the prejudiced and untrue statements made by this particular newspaper. I asked Mr. Chipp if a resolution could be passed at the present session of Parliament to the effect that the subject of UFOs be fully investigated and the findings made known to the public. In due course I received a reply from our Minister for Defence, Mr. Athol Townley. He said that the Government does investigate UFO reports and keeps in touch with other friendly Governments, but the Australian Government considers there is no reason for making statements to the public at this time."

MATERIALISM . . . OR IS IT?

by JOHN ROWLAND, B.Sc.

SEVERAL years ago now I wrote a book called *Mysteries of Science*, which was reviewed in these pages. It was designed to show that the world of purely materialistic science was not so self-contained or so automatic as many scientists thought. It brought forward such problems as those of water-divining, telepathy, and what were then universally derided as Flying Saucers (the very name was derisory at first), and attempted to prove that these were real, but were pushed on one side by the vast majority of orthodox scientists.

Since then, of course, as many readers will be aware, some of these phenomena have been studied more and more; the flying saucer of 1955—something to make a good or bad joke for a comedian—has become the UFO of 1963—something deserving serious study.

Or, at least . . . this *should* be so. With a number of scientists it is still *not* so.

I want in this article to draw a parallel with another of my "mysteries of science" of 1955. For many years the experiments on telepathy, conducted in the main by Dr. J. B. Rhine and his collaborators in the U.S.A., have, while they appear quite mathematically sound, been sedulously ignored by many scientists who really should know better. Especially have these things been shrugged off as nonsense by the pure materialists, such as those who come from the Marxist camp. Even, we have been told, if some form of mental transference, or telepathy, did take place, it would probably only be in the form of electro-magnetic waves sent out by one brain and received by another.

Recently there has appeared an English translation of a book by a leading Russian investigator in this field. It is this book which leads me to write here and now.

Entitled *Exeriments in Mental Suggestion*, this book is by Professor of Physiology at the University of Leningrad.

Professor Vasiliev starts by announcing that experiments on telepathy started in Russia as long ago as 1921. The idea of those early students of the problem was that electric waves took thoughts from one brain to another. Soon, however, it seemed that the distance apart of the two brains made little difference ; and electrical or magnetic charges, such as thunderstorms, in the space between the transmitting brain and the receiving brain made no difference at all to the exchange of thoughts. Then Stalin learned that this work was tending to disprove a materialistic theory, he ordered the research to be dropped. Professor Vasiliev says that it was impossible to put forward any physical explanation of what was happening.

In 1959—twenty years and more after the stopping of the original research work—some tests of telepathy were carried out by members of the crew of the United States nuclear submarine, the Nautilus. These experiments showed quite clearly that some form of communication between one human brain and another could take place, even when a great thickness of water intervened, and even when the thick metal hull of a submarine was between the two communicating mentalities.

Presumably because this was thought to have some possible military value—a spy with telepathic skills would be a frightening possibility—the Russian work was renewed, with surprising results.

There were even proven cases where people had been put to sleep telepathically, and awakened similarly at set times.

But there is no physical explanation; certainly the idea would appear to be quite unacceptable to a pure materialist.

Now why do I raise this matter here? Because there is (or there might be a considerable parallelism between this business about telepathy and what we have come to learn regarding flying saucers. Materialists in the past have said that telepathy is quite impossible —or, at best, that mind will communicate with mind by some kind of special radio set, built into the brain by nature. Now even in the home of materialism — Soviet Russia — it is agreed that there are aspects of this which cannot be explained by a purely materialistic philosophy.

In the past those who hold that flying saucers are objects **coming** to us from outer space, impelled by a force which we cannot yet understand, have been derided as much as the believers in telepathy. The Marxists derided telepathy; the Astronomer Royal and many other experts on stars and planets, derided the UFO. May it not be that, just as the materialists of Soviet Russia are coming to see the reality of telepathy, the anti-flying.saucer camp may yet come to see the reality of these objects from outer space? If this is so, we may live to read a book called *Experiments in Planetary Navigation,* by the Astronomer Royal, and telling of his investigations into flying saucers and their work. Less likely things than this have happened in the past—and, most notable of all, I think, this admission of Professor Vasiliev that telepathy has a non-material basis.

Editorial Note

(In the London Evening Standard, September 27, Peter Fairley reported from the Paris Astronautical Conference that Dr. Eugene Konecci, one of America's top space medicine experts, had said that telepathic communication with astronauts was being given top priority in the Russian space programme and in the U.S.A., too. American spacecraft had found a region in outer space where the earth's and the moon's gravity had exactly cancelled each other out. It was suspected that thought waves between humans were affected by gravity and it was possible that an astronaut in this region might be highly receptive to the thoughts from the minds of people on earth. Phenonmena which indicated that it might be possible to build equipment which would register when a human thought struck had recently come to light in New York. Dr. Konecci concluded: "If the result of conducted experiments are half as good as the Soviets claim then they may be the first to put a human thought in orbit or achieve mind to mind communication with humans on the moon.")

The Moon and the Planets

by C. M. Pither

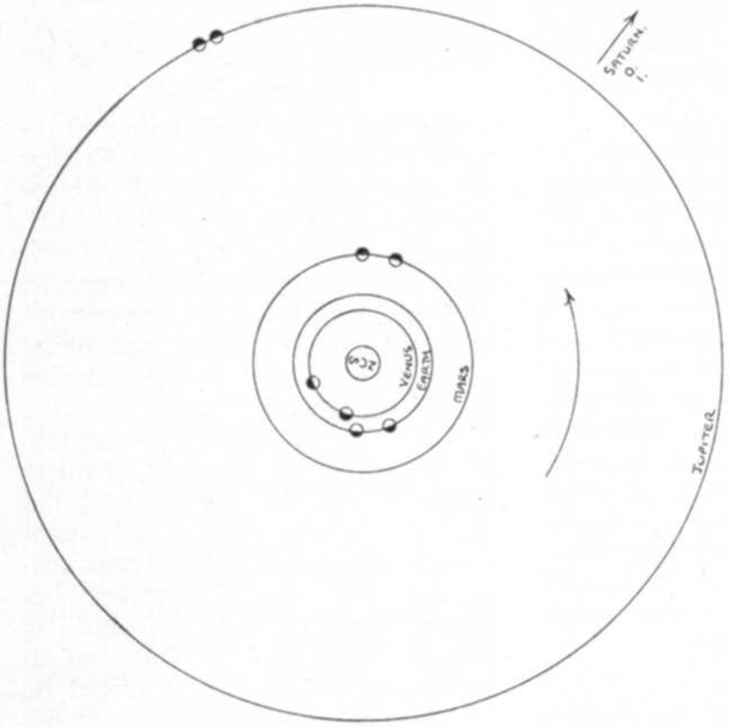


FIG. 1.

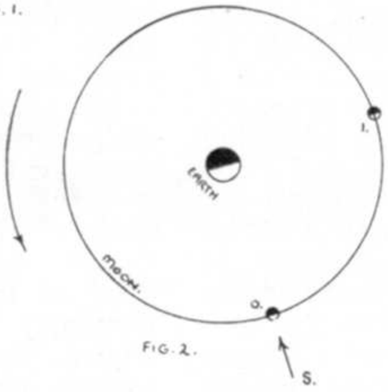


FIG. 2.

Figs. 1 and 2:

0. The Moon and Planets for mid-March.

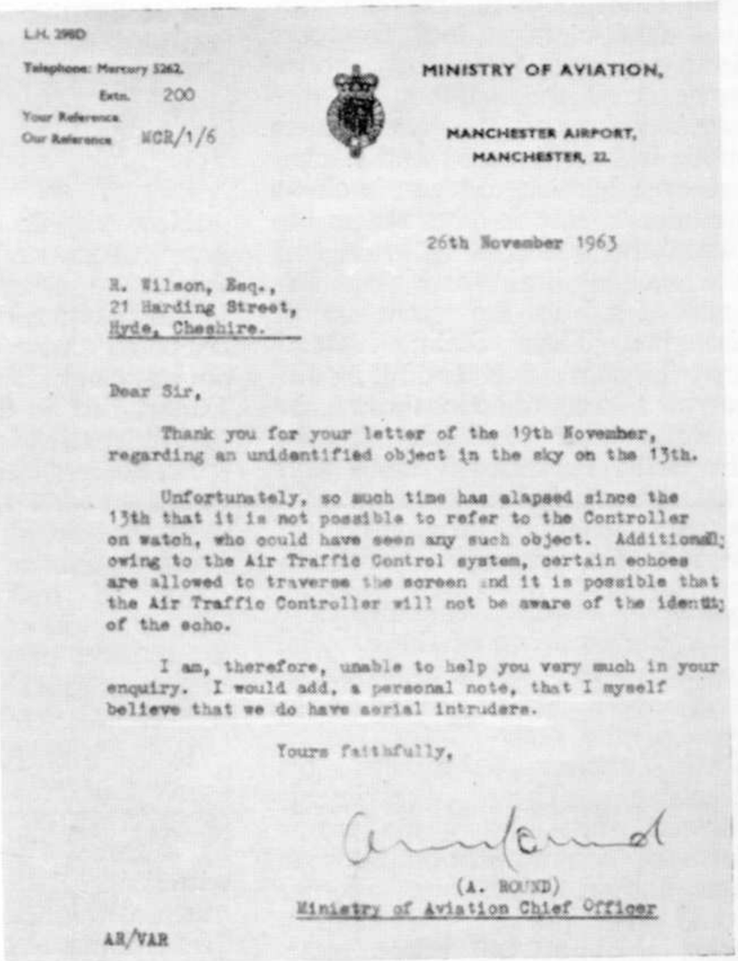
1. The Moon and Planets for mid-April.

N.B.

Venus reaches Greatest Eastern Elongation on Apr. 10; this is to say that Venus has moved out to its farthest point from the East limb of the Sun, as seen from Earth. Thus theoretically, Venus is at half phase; which is known as Theoretical Dichotomy.

Jupiter is in Conjunction on Apr. 22; for explaination see issue for 1963 March—April.

AN UNEXPECTED REPLY



L.H. 298D

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Extn. 200
Your Reference.
Our Reference MCR/1/6

MINISTRY OF AVIATION,

MANCHESTER AIRPORT,
MANCHESTER, 22.

26th November 1963

R. Wilson, Esq.,
21 Harding Street,
Hyde, Cheshire.

Dear Sir,

Thank you for your letter of the 19th November, regarding an unidentified object in the sky on the 13th.

Unfortunately, so much time has elapsed since the 13th that it is not possible to refer to the Controller on watch, who could have seen any such object. Additionally, owing to the Air Traffic Control system, certain echoes are allowed to traverse the screen and it is possible that the Air Traffic Controller will not be aware of the identity of the echo.

I am, therefore, unable to help you very much in your enquiry. I would add, a personal note, that I myself believe that we do have aerial intruders.

Yours faithfully,

(A. ROUND)
Ministry of Aviation Chief Officer

AR/VAR

This letter was received by Mr. R. Wilson, of 21, Harding Street, Hyde, Cheshire. He had reported a bright silvery object in the sky on November 13, 1963, at 3.55 p.m. travelling at an estimated speed of over 5,000 m.p.h. at approximately 10,000 feet.

PERSONAL COLUMN

MIDDLESEX UFOLOGISTS! Join the Middlesex STAR Fellowship. Details from J. Goddard, Wynchlands, Walton Bridge Road, Shepperton, Middlesex.

TO OUR FRIENDS ON EARTH tells of space communication. 9d. inc. postage from J. Goddard, Wynchlands, Walton Bridge Road, Shepperton, Middlesex.

Another Project Magnet

PROJECT Magnet is usually associated with the late Wilbert B. Smith of Canada. Now it appears that there is another project with the same name, conducted officially, though without much publicity, by the United States of America.

News of the American undertaking is revealed in the *UFO Investigator*, June-September, 1963 edition, published by the National Investigations Committee on Aerial Phenomena. The existence of Project Magnet was discovered by NICAP Adviser, Robert C. Beck, a former Lockheed flight test engineer.

Used in the programme are Super Constellations equipped with highly sensitive magnetometers to detect unusual magnetic variations, not only irregularities from the earth's magnetic field but also magnetic forces from any source above the earth. Apparently, peculiar readings have already been discovered above the Key West-Caribbean area. The *UFO Investigator* points out that it was in this area in 1945 five navy torpedo planes took off from Fort Lauderdale for navigational practice over the Atlantic and no trace of them has ever been found : a large Coast Guard flying-boat which went out to search also completely disappeared. The Navy investigation that followed disclosed that a radio conversation between the flight leader and another of the missing pilots had been heard indicating that the compasses on all five planes had ceased to function properly.

Mr. Robert Beck was able to take photographs both of the Constellation which is clearly marked Project Magnet. He was able to talk to with the plane's three pilots and in answer to his questions : "Does 'Project Magnet' signify the same type of research by the Canadian Project Magnet ?" he was told : "Yes, it is closely related." Furthermore, Mr. Beck was convinced that the civilian in charge of the research equipment — his surname was Crow — and the pilots were all perfectly aware that Project Magnet was part of the overall search for UFO information.

Venus comes to life

"According to Soviet scientists Venus could be populated by human beings similar to ourselves. The discovery can change the space programme of the big two.

"Radio Moscow has announced that the planet Venus has an atmosphere possessing oxygen. Consequently she is susceptible to population by being similar to earthmen. The Soviet scientists, declared Radio Moscow, have analysed the spectrum of light when observing the atmosphere of Venus and discovered that oxygen exists in the atmosphere. The scientists have declared that it can be assumed that the atmospheric conditions are very similar to those that surround the earth. It is believed that this discovery may have important repercussions on the cosmic research programmes of the United States and Russia. It may prompt the two space powers to abandon their projects for the colonisation of planets supposedly dead, such as the Moon and Mars, and to intensify their efforts to penetrate the secrets of those that are now held to be inhabited."

From the Brussels **Le Soir**, September 1 and September 2 issues.

APOLOGY

The Editor and the Publishers would like to apologise for the delay in publication of the January-February issue. This was caused partly by our change of printers and address and partly by the Christmas holidays. We also apologise for the printing errors which crept into this issue. They were similarly caused, but we hope to return to a more even keel in future.

THE HERTFORDSHIRE SIGHTING

The following article was originally submitted as a letter, but was considered too long for inclusion in our Mail Bag feature. It is now printed as an article. Readers are also referred to the article " Was it a Balloon ? " which appeared in the November-December, 1963, issue of the FLYING SAUCER REVIEW. Accompanying the article we reproduced a photograph taken by Mr. Willemstyn of an object which appeared stationary over the Watford area and was reported by several witnesses who have subsequently come forward in corroboration of the evidence.

In compliance with the request made at the end of this article, we are suppressing the name of the correspondent which is, however, known to the Editor together with his address.

As you are no doubt aware the UFO was positioned over Hatfield airfield from around 3.30 until nightfall (between 9.30 and 10.00 p.m.) on Thursday, August 1.

I wonder if anyone has approached the De Havilland Aircraft Co. and also the U.S.A.F. of Bentwaters re this matter ? I understand that aircraft flew from both these establishments, in an attempt more closely to inspect this object. Although the high altitude of the UFO evidently prevented a very close examination, nevertheless I imagine some rather interesting photographs must surely have been obtained. Any such photographs would I feel be of great interest to your readers.

One cannot help wondering why such photographs (if obtained) have not already appeared in the press, and if the photographs have not been obtained, again, one wonders. " Why on earth not ! " Surely an unusually shaped meteorological balloon behaving in an astonishing fashion, is news worthy of a photograph in the newspapers. Here was a unique opportunity for the Air Ministry to back up its frequent claims with positive proof of mistaken identity. Why wasn't this opportunity seized by them ? Particularly so, in view of officialdom's now established error in indicating the cause of the Wiltshire crater.

Information could also be sought from De Havillands at Hatfield regarding the radar tracking of the UFO. Speeds and direction of flight would make very interesting reading, bearing in mind the prevailing 8 m.p.h. wind blowing from N.E. to S.W. at that time, in this area.

On Friday, August 2, I discussed this business with two members of my office staff. Both of my colleagues had observed the UFO on the previous evening, together with several other people. Through our conversation I learnt that a certain De Havilland's executive arrived home on Thursday evening full of enthusiasm to discuss the phenomenon. He took great delight in pointing out the object to his neighbour, my colleague, and in recounting the day's activities at the Hawker Siddeley plant (or De Havilland works) re the matter. One gathered that De Havilland's was alive with activity over this business.

Twenty-four hours later my colleague could not arouse the slightest flicker of interest in the De Havilland's executive, on this subject. Finally my colleague quoted the local paper on the subject. This enterprising journal *The Herts Advertiser* had obtained the standard statement from the Air Ministry and of course made the firm declaration that the object seen was ' almost certainly a met. balloon.' The executive's response was merely to state : " Oh, that's what it must have been then," and he virtually buried the subject in a show of disinterest. My colleague's friend appeared to know nothing about the radar tracking of the object, nothing about photographs taken or not taken, and nothing about reconnaissance flights. One would have thought that the matter had never been discussed at Hatfield or anywhere else. Perhaps whatever information was available on Friday was classified as " secret "?

I have since persuaded my colleague to raise the subject again with the De Havilland's executive. On this latter occasion he was able to show him the copy of ' Flight International ' (August 15, 1963) in which Mr. Ogilvy, the London Flying School Instructor of Garston Herts., flatly rejects the idea of the object being a met. balloon. Apparently, the executive when shown this letter seemed initially surprised by it, and in particular seemed surprised by and interested in the second sketch (shown with the letter) of a delta shape. Far from feigning a lack of interest on this occasion, he read it through most carefully twice. Finally he noted the date of the issue and remarked that he must obtain a copy to take to Hatfield. Having read the letter in this manner he then avoided discussing the matter

further beyond stating that (a) the letter was "quite interesting," and (b) that he was unable to cast more light on the matter since he understood that "radar contact at Hatfield was quickly lost soon after nightfall."

Mr. Ogilvy in his letter to *Flight International,* states that the object, seen through binoculars, appeared to depart at nightfall in a V.T.O. position. He feels that he cannot be certain on this point because of failing light. It seems possible however that this impression could be confirmed if the rumour of a disappearing radar blip at Hatfield could be checked and found to be correct.

I am really writing this article to suggest that it is just possible that some information is being withheld from the public re this UFO sighting, by either Messrs. De Havillands or the U.S.A.F. of Bentwaters, or possibly by both.

I cannot see the point of giving the name and address of the particular De Havilland's executive whose behaviour has been described to me, since any direct approach by you to him would almost certainly embarrass my colleague eventually. However this particlar executive cannot be the only person at De Havilland's with knowledge of this UFO and you might more usefully address yourselves to the General Manager of that Company.

If any part of this article is considered suitable for publication in your journal, I must—with regret —request that my name remain undisclosed. I am quite certain that my employers would regard the subject of UFOs being quite unsuitable for an accountant and cost accountant. They would almost certainly consider that such an interest indicated an inability to think in a rational manner, and this would certainly not help me in my career.

(Continued from page 17)

would take for a Flying Saucer . . . it was down on the ground . . . as they watched it a trap-door in the upper part slowly opened. It was then they ran!" I interjected, "They were scared, then?" He replied, "Yes! They were scared! They ran until they were in a building where they could tell someone about it. They were told to 'sober up' but they were not drunk and are quite sane and sensible. When someone got to the spot they found nothing."

The Padre was emphatic that R.A.F. Security Regulations wholly ruled out any chance of my meeting the two Boy Entrants who had reported the alleged landing. He said he dare not arrange it, even privately and 'out of hours', and withheld his name, so far as publication is concerned, although he gave it in strictest confidence. He said he believed that the two lads believed what they had reported to be the truth, but that he did not think I would get any 'change' from any of the Station Officers. (This is borne out by the letter from Col. Byford-Jones to me, dated January 7.)

Col. Byford Jones, of the *Express and Star*, in reply to Mr. Daniels of January 7, stated: "We have made inquiries at COSFORD R.A.F. Station with what results you will have seen in the *Express and Star*. The authorities deny that any such incident as you mention ever took place."

No doubt those who wish to be satisfied that nothing occurred at Cosford will accept this statement. Others will wish that our newspapers were slightly more curious about the mystery in our skies and wake up to the fact that the "authorities" are not telling the public the truth. The newspapers could force this matter into the open if only they were less credulous. They are, in fact, out of touch with a large and growing section of informed public opinion on the subject of UFOs.

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article. If the space ship could have increased its tempic field only 12½ times, it would have completed its journey in 40 years by the earth's clocks instead of 500. The ship would still travel at 99.7% of the speed of light, but the slowing down of time caused by this speed would be exactly counterbalanced by the increased tempic field.

Eventually it would always be a question of how intense the tempic field could be made. If one could produce a tempic field some millions of times stronger than the earth's, the most incredible journeys could be done in a very short space of time. One can work it out; calculating the percentage of "c" for a given slowing down, and then increasing the tempic field by the amount required to bring one back to "normal," and the computing the time taken by the space ship to reach a given star system.

I do not know how reliable the section on the tempic field is, but if it is only half way to the truth, the effect is to provide for the first time a reasonable basis for the assumption one has made for many years, which is that the UFOs are unlikely to come from within our solar system, or anywhere near it. It is all very well to assume they have their origins in different solar systems, but the obvious difficulties of interstellar travel rather tend to make these ideas almost an act of faith. I dislike acts of faith, one never learns anything from them, no matter how well intentioned they may be.

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